2006-08 TRANSMISSION

Manual Transmission (SPFM) 5-Speed) - Civic

5-SPEED MANUAL TRANSMISSION

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07AAK-SNAA400	1.8 Support Eyelet	1
②	07AAK-SNAA500	1.8 Support Bolt	1
* ③	07GAJ-PG20110	Mainshaft Holder	1
* ④	07GAJ-PG20130	Mainshaft Base	1
⑤	07JAD-PL90100	Oil Seal Driver	1
⑥	07NAD-P20A100	Oil Seal Driver Attachment	1
* * ⑦	07736-A01000B	Adjustable Bearing Puller, 20—40 mm	1
⑧	07746-0010300	Attachment, 42 x 47 mm	1
⑨	07746-0010700	Attachment, 24 x 26 mm	1
⑩	07746-0030100	Driver, 40 mm I.D.	1
⑪	07746-0030300	Driver, 30 mm I.D.	1
⑫	07749-0010000	Driver	1

* Part of Mainshaft Inspection Tool Set, 07GAJ-PG20102.

* * Must be used with commercially available 3/8"-16 UNF Slide Hammer.

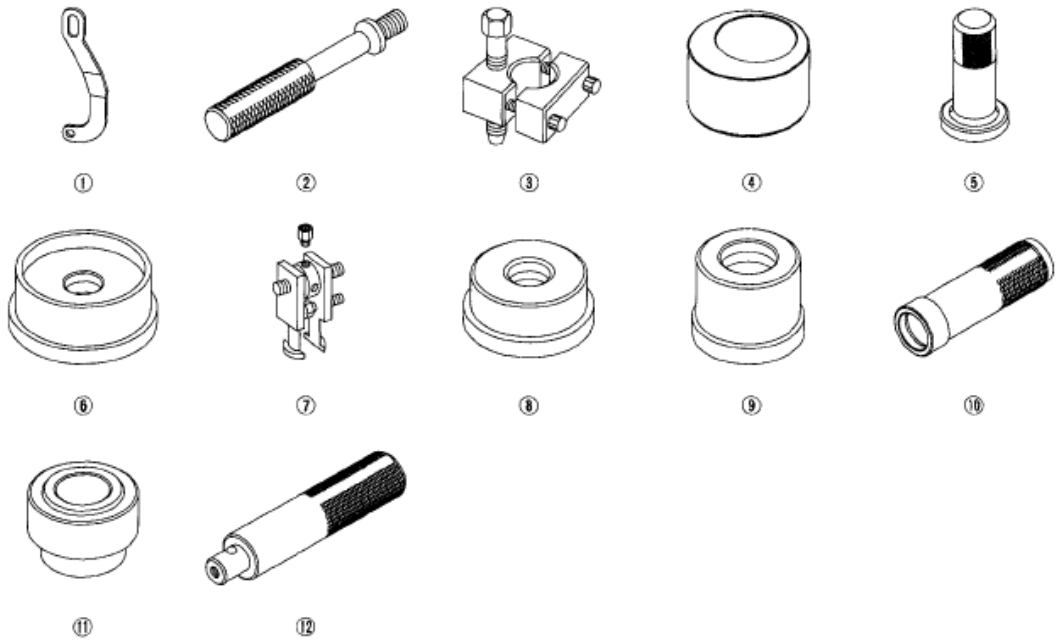


Fig. 1: Identifying 5-Speed Manual Transmission Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REVERSE LOCKOUT SYSTEM

SYSTEM DESCRIPTION

The reverse lockout system prevents mis-shifting from 5th gear to reverse.

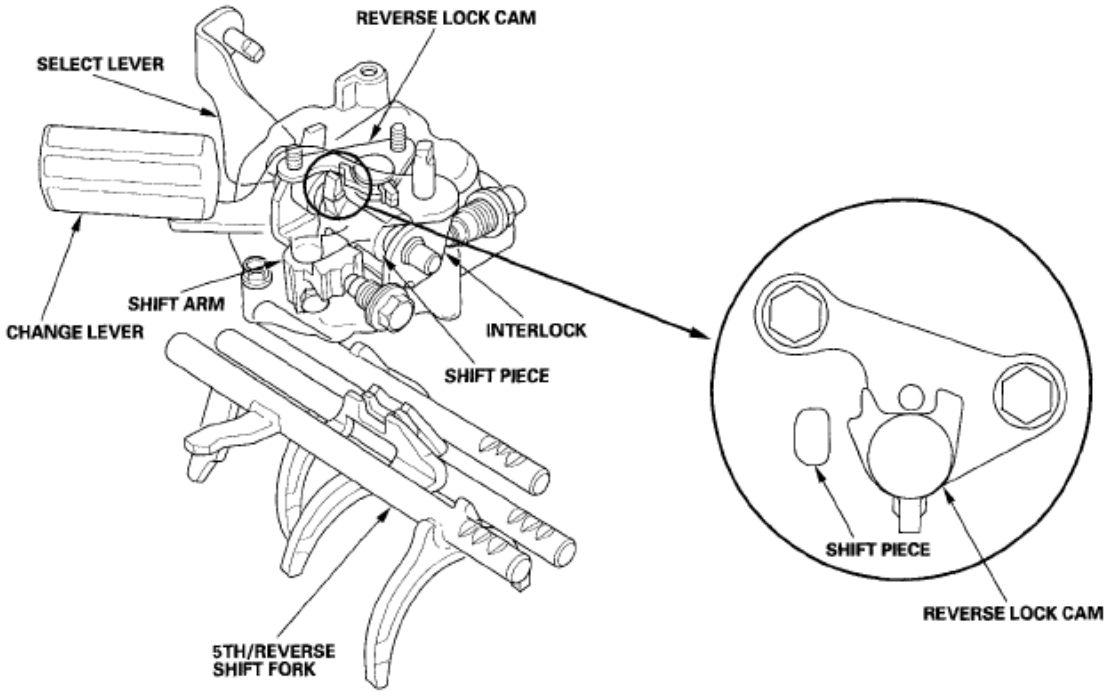


Fig. 2: Identifying Reverse Lockout System Prevents Mis-Shifting From 5Th Gear To Reverse
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shifting to 5th gear or reverse gear

When the shift lever is moved to the 5th gear-reverse plane, the shift piece pushes and turns the reverse lock cam. When the shift lever is shifted to 5th gear or reverse, the shift fork moves and completes the gear change. When the shift to 5th gear or reverse is completed, the reverse lock cam is turned back to a neutral position by the return spring.

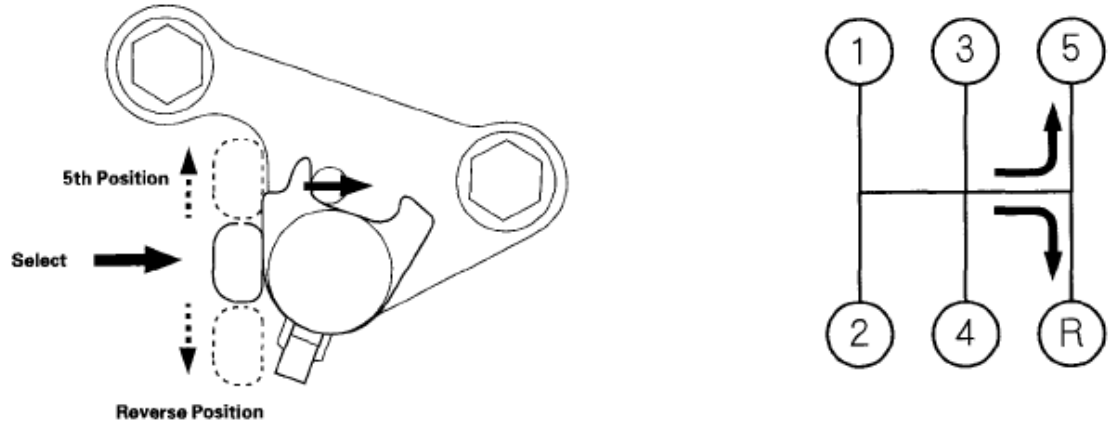


Fig. 3: Identifying 5th Gear Or Reverse Gear Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shifting from 5th gear to reverse

When shifting out of 5th gear, the shift piece is stopped by the notch in the reverse lock cam, thus preventing a mis-shift from 5th gear to reverse.

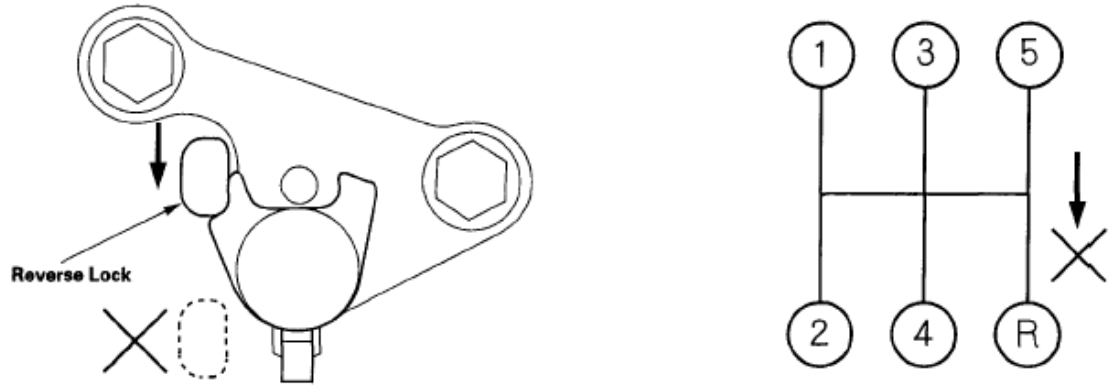


Fig. 4: Identifying Reverse Lock Cam
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MANUAL TRANSMISSION

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Probable cause(s)	Diagnostic procedure
Hard to shift	1. 1st synchro ring	• Check the 1st synchro ring (see

into 1st gear	defective. 2. 1st/2nd synchro sleeve and hub defective. 3. 1st gear defective. 4. Change lever assembly defective.	**SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the 1st/2nd synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check 1st gear (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the change lever assembly (see **CHANGE LEVER ASSEMBLY DISASSEMBLY/REASSEMBLY**).
Hard to shift into 2nd gear	1. 2nd synchro ring defective. 2. 1st/2nd synchro sleeve and hub defective. 3. 2nd gear defective. 4. Change lever assembly defective.	• Check the 2nd synchro ring (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the 1st/2nd synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check 2nd gear (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the change lever assembly (see **CHANGE LEVER ASSEMBLY DISASSEMBLY/REASSEMBLY**).
Hard to shift into 3rd gear	1. 3rd synchro ring defective. 2. 3rd/4th synchro sleeve and hub	• Check the 3rd synchro ring (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the 3rd/4th synchro sleeve and hub (see **SYNCHRO SLEEVE AND**

	defective. 3. 3rd gear defective. 4. Change lever assembly defective.	**HUB INSPECTION AND REASSEMBLY**). • Check 3rd gear (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the change lever assembly (see **CHANGE LEVER ASSEMBLY DISASSEMBLY/REASSEMBLY**).
Hard to shift into 4th gear	1. 4th synchro ring defective. 2. 3rd/4th synchro sleeve and hub defective. 3. 4th gear defective. 4. Change lever assembly defective.	• Check the 4th synchro ring (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the 3rd/4th synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check 4th gear (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the change lever assembly (see **CHANGE LEVER ASSEMBLY DISASSEMBLY/REASSEMBLY**).
Hard to shift into 5th gear	1. 5th synchro ring defective. 2. 5th synchro sleeve defective. 3. 5th gear defective. 4. Change lever assembly defective.	• Check the 5th synchro ring (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check the 5th synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**). • Check 5th gear (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**).

		• Check the change lever assembly (see **CHANGE LEVER ASSEMBLY DISASSEMBLY/REASSEMBLY**).
Hard to shift into reverse	1. Reverse shift fork defective. 2. Reverse idler gear defective. 3. Reverse gear defective. 4. Change lever assembly defective. 5. Reverse lockout system defective.	• Check the reverse shift fork (see **REVERSE SHIFT FORK CLEARANCE INSPECTION**). • Check the reverse idler gear (see **REVERSE SHIFT FORK CLEARANCE INSPECTION**). • Check reverse gear. • Check the change lever assembly (see **CHANGE LEVER ASSEMBLY DISASSEMBLY/REASSEMBLY**). • Check the reverse lockout system.
Noise from the transmission	1. Low transmission fluid level. 2. Worn or damaged transmission gears. 3. Worn or damaged transmission bearings.	• Check the transmission fluid level (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). • Check the transmission gears. • Check the transmission bearings.
Shift lever does not operate smoothly	1. Shift cable defective. 2. Joint in shift cable and transmission or body.	• Check the change wires. • Check joint in the change wires (see **GEARSHIFT MECHANISM REPLACEMENT**).
Transmission jumps out of gear	1. Detent ball springs defective. 2. Worn synchro teeth.	• Check the detent ball springs. • Check the synchro teeth.

TRANSMISSION FLUID INSPECTION AND REPLACEMENT

1. Raise the vehicle on the lift.
2. Remove the filler plug (A) and washer (B), check the condition of the fluid, and make sure it is at the proper level (C).

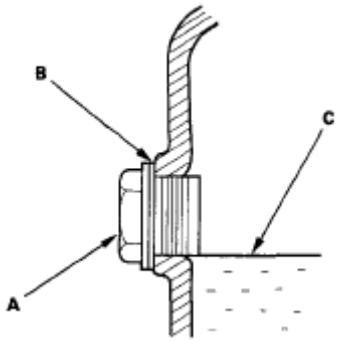


Fig. 5: Identifying Filler Plug And Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the fluid is dirty, remove the drain plug (A), and drain it.

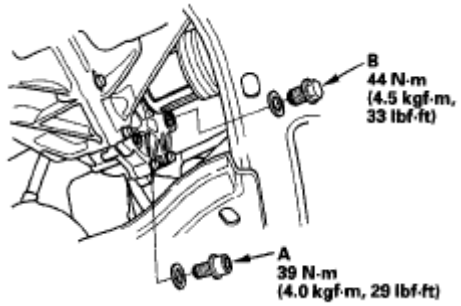


Fig. 6: Identifying Drain Plug (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the drain plug with a new washer, and refill the transmission fluid to the proper level.

Fluid Capacity

1.4 L (1.5 US qt) at fluid change

1.6 L (1.7 US qt) at overhaul

Always use Honda Manual Transmission Fluid (MTF). Using engine oil can cause stiffer shifting because it does not contain the proper additives.

5. Install the filler plug (B) with a new washer.
6. If the maintenance minder required to replace the fluid, reset the maintenance minder (see **MAINTENANCE MINDER**). If it did not, select BODY ELECTRICAL, GAUGES, ADJUSTMENT, MAINTENANCE MINDER, RESET, MAINTENANCE SUB ITEM 3 with the HDS.

BACK-UP LIGHT SWITCH TEST

1. Disconnect the back-up light switch connector (A).

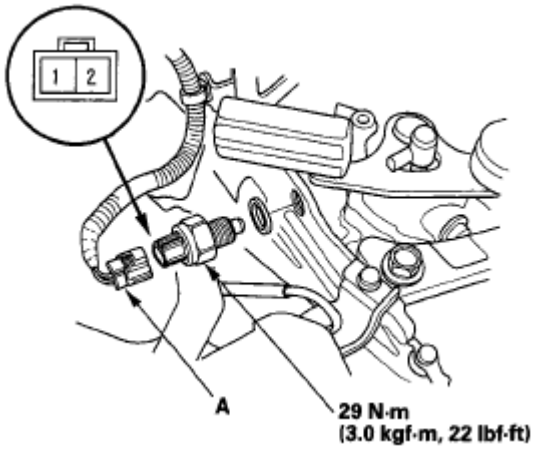


Fig. 7: Identifying Back-Up Light Switch Connector (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between the back-up light switch 2P connector terminals No. 1 and No. 2. There should be continuity when the change lever is only in reverse.
3. If necessary, replace the back-up light switch. Install the new washer and back-up light switch on the transmission housing.

TRANSMISSION REMOVAL

Special Tools Required

- 1.8 Support eyelet 07AAK-SNAA400
- 1.8 Support bolt 07AAK-SNAA500
- Engine support hanger, A & Reds AAR-T-12566 *
- Subframe adapter VSB02C000016 *
- 2006 Civic engine hanger VSB02C000025 *

* These special tools are available through the Honda Tool and Equipment program.

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Make sure you have the anti-theft code for the audio unit and or the navigation system, then write down the audio presets.
2. Disconnect the negative cable from the battery, then disconnect the positive cable.
3. Remove the battery.
4. Remove the cowl cover and under-cowl panel (see **FRONT GRILLE COVER REPLACEMENT**).
5. Remove the air cleaner assembly (see **THROTTLE BODY CLEANING**).
6. Remove the harness clips (A) and the intake air duct (B), then remove the battery base (C) with the coolant reservoir (D).

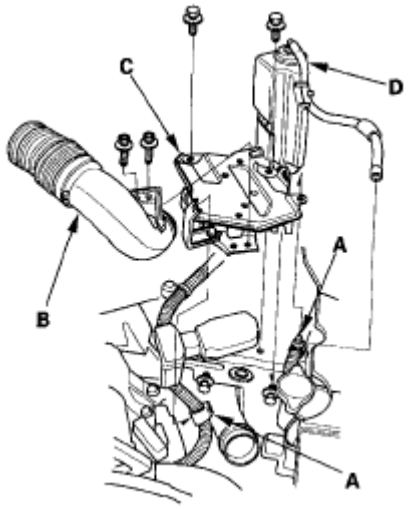


Fig. 8: Identifying Harness Clips And Intake Air Duct

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the clutch line bracket (A), then carefully remove the slave cylinder (B) to avoid bending the clutch line.

NOTE: Do not press the clutch pedal after the slave cylinder has been removed.

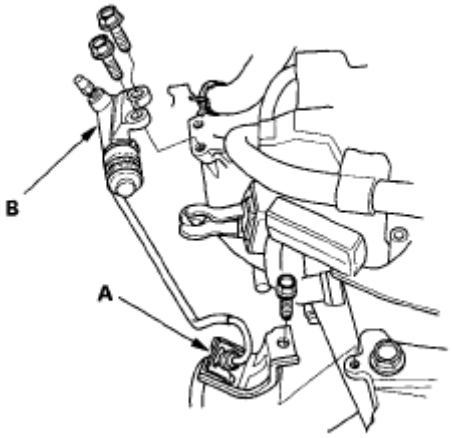


Fig. 9: Identifying Clutch Line Bracket And Slave Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the back-up light switch connector (A), then remove the engine harness cover (B) and the harness clips (C).

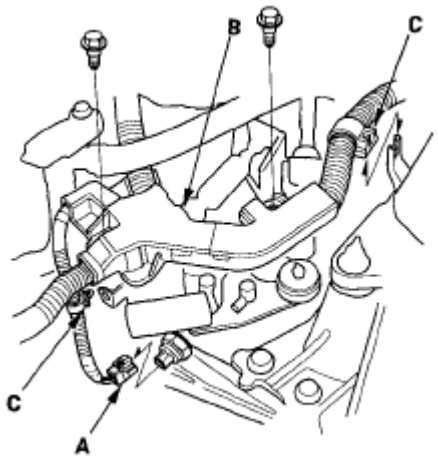
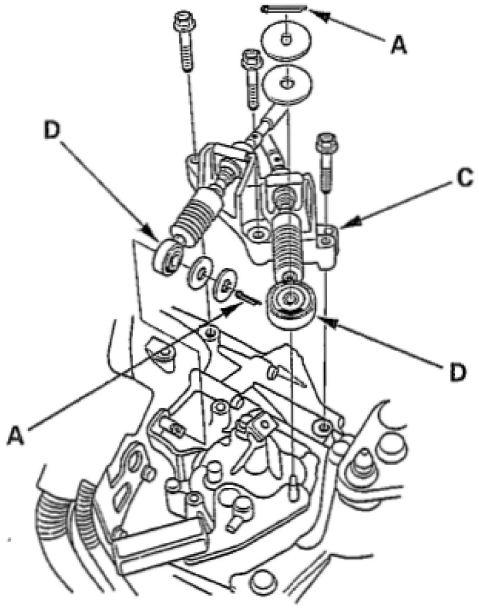


Fig. 10: Identifying Back-Up Light Switch Connector And Engine Harness Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the cable bracket (A), then disconnect the cables (B) from the top of the transmission housing. Carefully remove both cables and the bracket together to avoid bending the cables.

'06 model



'07-08 models

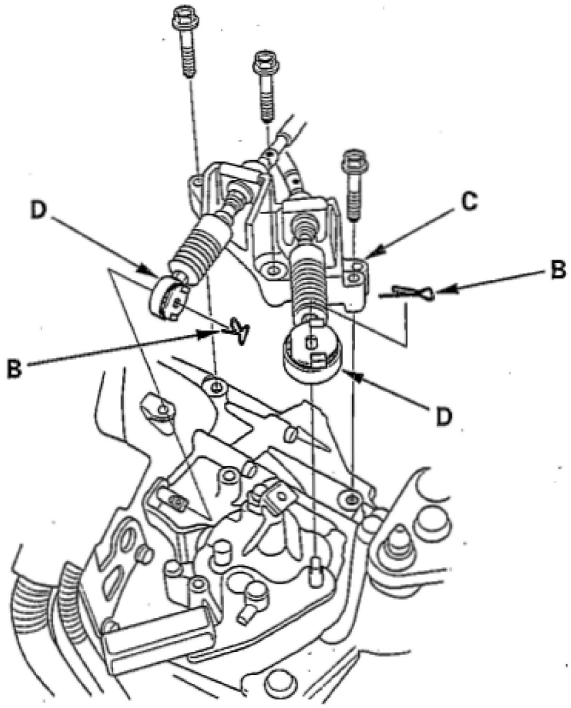


Fig. 11: Identifying Cable Bracket And Cables
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the output shaft (countershaft) speed sensor connector (A).

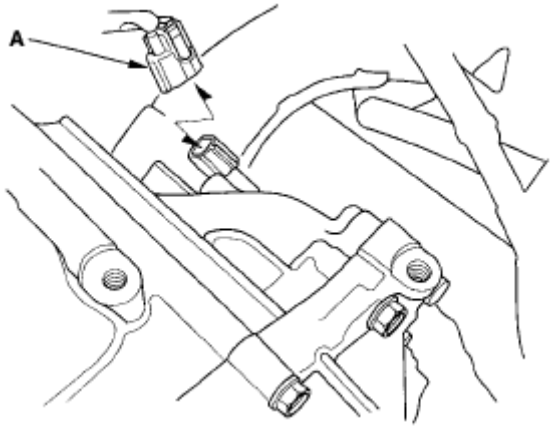


Fig. 12: Identifying Output Shaft (Countershaft) Speed Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the air cleaner housing bracket (A), and install support eyelet (B) behind the breather pipe (C) and down to the threaded hole (D) on the cylinder head.

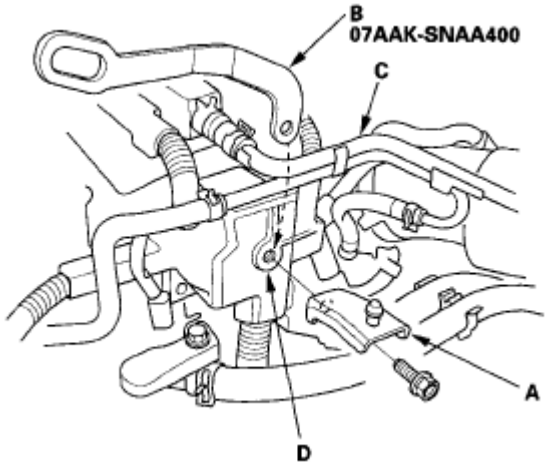


Fig. 13: Identifying Air Cleaner Housing Bracket And Support Eyelet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Attach the support eyelet (A) to the cylinder head with the support bolt (B). Tighten the bolt by hand.

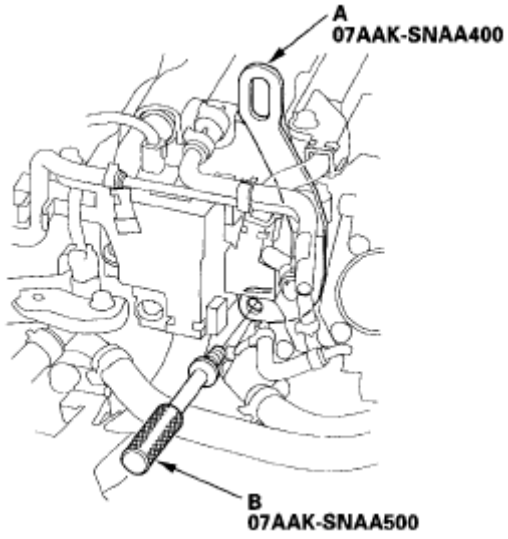


Fig. 14: Identifying Support Eyelet To Cylinder Head
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the front leg assembly (A), hook (B), and wingnut (C) from an A and Reds engine support hanger (AAR-T-12566) onto the engine hanger. Carefully position the engine hanger on the vehicle, and attach the hook to the slotted hole in the support eyelet (D). Tighten the wingnut by hand to lift and support the engine/transmission assembly.

NOTE: Use care when working around the windshield.

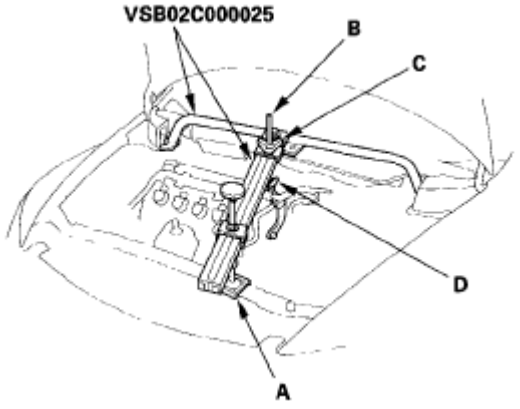


Fig. 15: Identifying Front Leg Assembly Hook And Wingnut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the upper transmission mounting bolt.

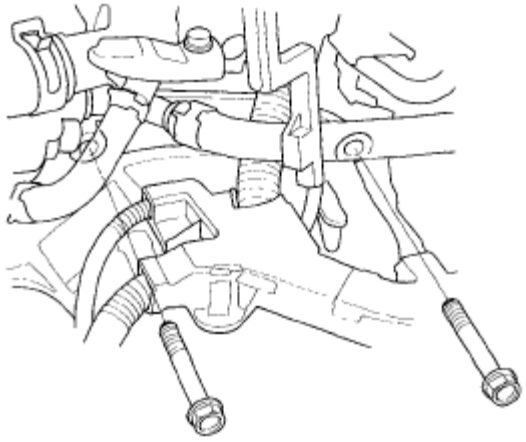


Fig. 16: Identifying Upper Transmission Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the transmission mounting bolt (A) and nuts (B), then remove the ground cable (C). Remove the transmission mounting bracket base bolts (D).

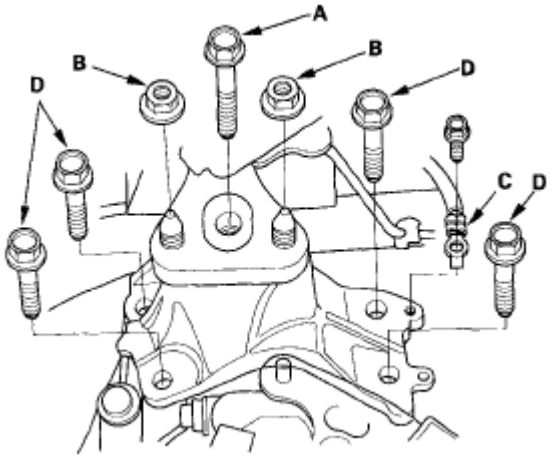


Fig. 17: Identifying Transmission Mounting Bolt And Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the stud bolts (A) and the transmission mounting bracket base (B).

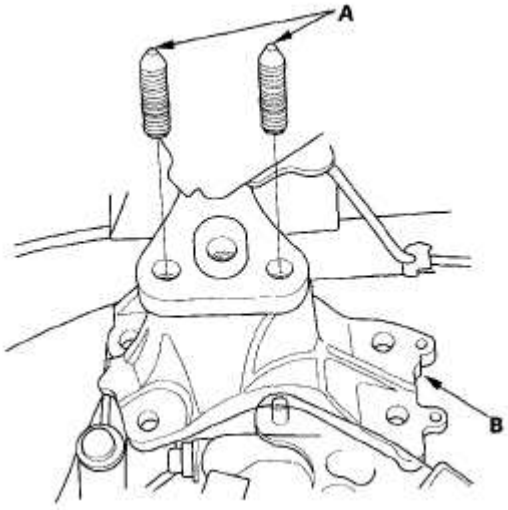


Fig. 18: Identifying Stud Bolts And Transmission Mounting Bracket Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Raise the vehicle, on the lift.
18. Remove the splash shield.

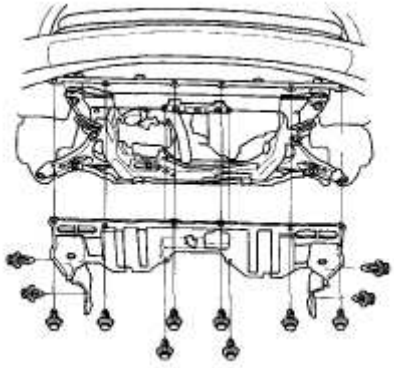


Fig. 19: Identifying Splash Shield
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Drain the transmission fluid. Reinstall the drain plug with a new washer (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**).
20. Separate the lower arm (see step 6 on **DRIVESHAFT REMOVAL**).
21. Remove the stiffner plates (A) and mounting bracket (B) from the steering gearbox.

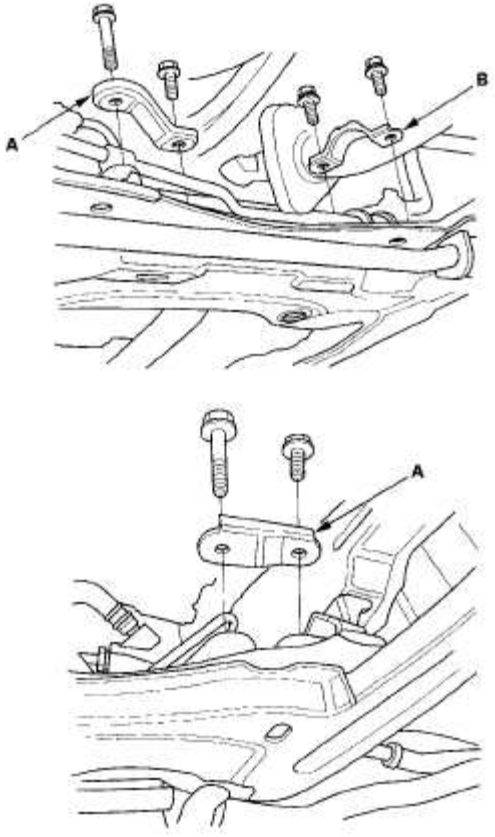


Fig. 20: Identifying Stiffner Plates And Mounting Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Remove the steering line brackets (A) and clip (B).

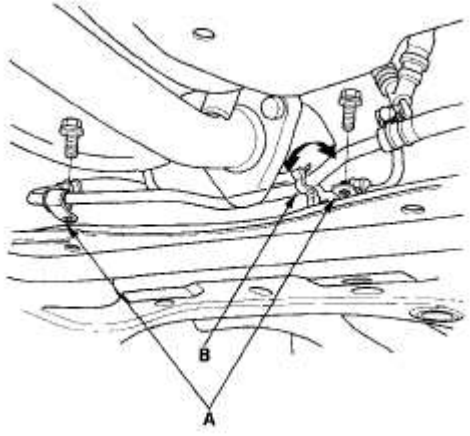


Fig. 21: Identifying Steering Line Brackets And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove the middle subframe mounting bolts (A).

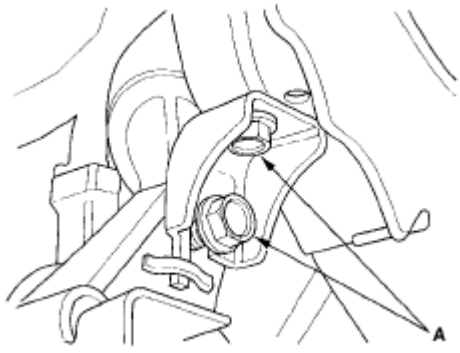


Fig. 22: Identifying Subframe Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the lower torque rod mounting bolts.

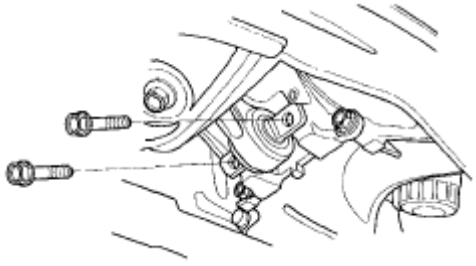


Fig. 23: Identifying Lower Torque Rod Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Note the reference marks (A) on both sides of the subframe that line up with the body (B).

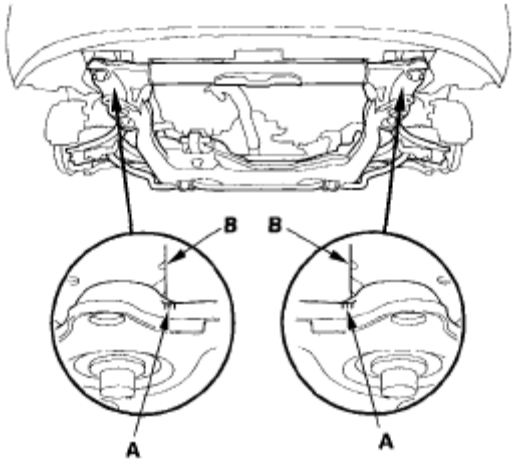


Fig. 24: Locating Subframe Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Attach the front subframe adapter to the front subframe by wrapping the band over the front subframe and attaching the end of the band to the front subframe adapter with the pin (A).

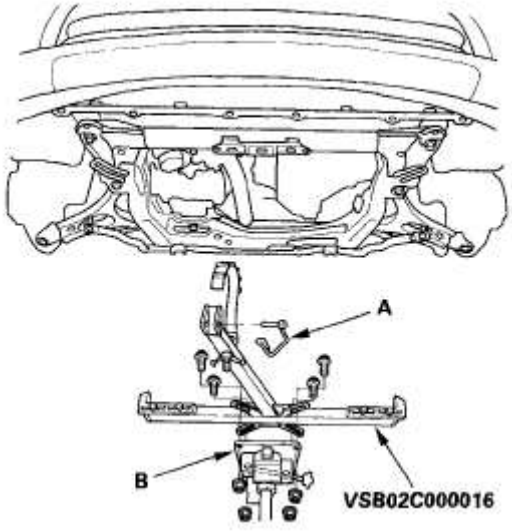


Fig. 25: Attaching Front Subframe Adapter To Front Subframe By Wrapping Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Raise the jack, and line up the slots in the arms with the bolt holes on the corner of the jack base (B), then attach them securely.
28. Remove the front subframe mounting bolts (A) and front subframe (B).

NOTE: Suspend the steering gearbox with an appropriate size wire.

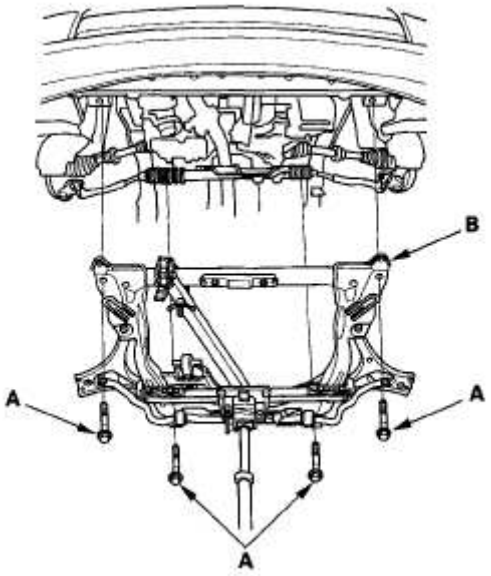


Fig. 26: Identifying Front Subframe Mounting Bolts And Front Subframe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Pry the driveshafts inboard joint (see step 8 on **DRIVESHAFT REMOVAL**).
30. Remove the intermediate shaft (see **INTERMEDIATE SHAFT REMOVAL**).
31. Remove the clutch cover (A).

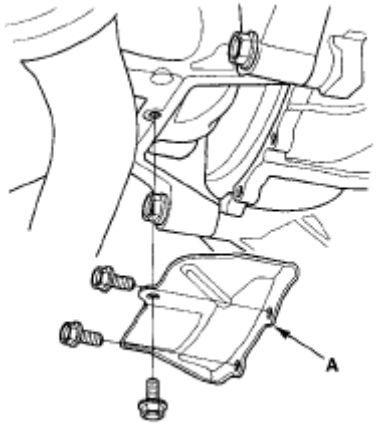


Fig. 27: Identifying Clutch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Support the transmission with the transmission jack.
33. Remove the lower transmission mounting bolts.

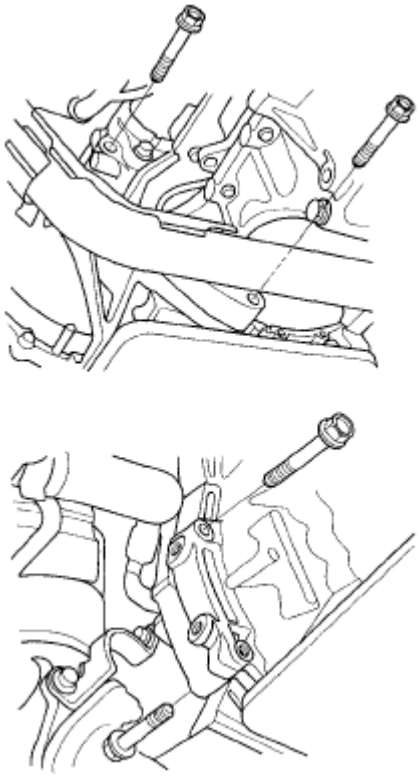


Fig. 28: Identifying Lower Transmission Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Pull the transmission away from the engine until the transmission mainshaft clears the clutch pressure plate.
35. Slowly lower the transmission about 150 mm (6 in.) Check once again that all hoses and electrical wiring are disconnected and free from the transmission, then lower it all the way.
36. Remove the release fork boot (A) from the clutch housing (B).

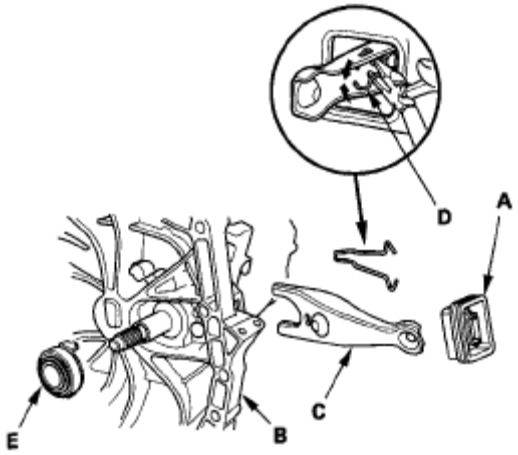


Fig. 29: Identifying Release Fork Boot From Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Remove the release fork (C) from the clutch housing by squeezing the release fork set spring (D) with pliers. Remove the release bearing (E).

TRANSMISSION INSTALLATION

Special Tools Required

- 1.8 Support eyelet 07AAK-SNAA400
- 1.8 Support bolt 07AAK-SNAA500
- Engine support hanger, A & Reds AAR-T-12566*
- Subframe adapter VSB02C000016 *
- 2006 Civic engine hanger *

* : These special tools are available through the Honda Tool and Equipment program.

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Loosen the upper torque rod mounting bolt (A).

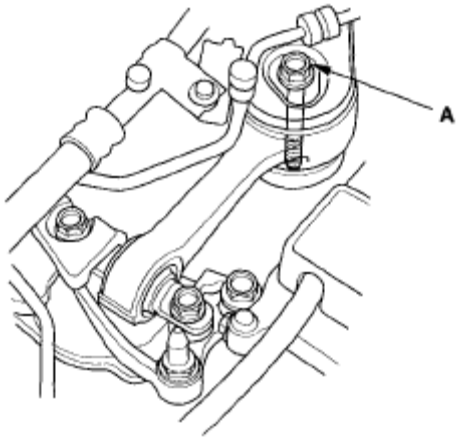


Fig. 30: Identifying Upper Torque Rod Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Make sure the two dowel pins (A) are installed in the clutch housing.

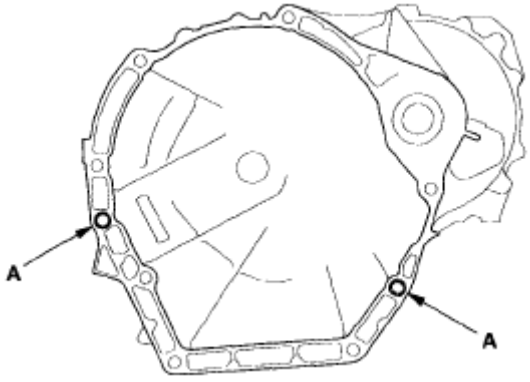


Fig. 31: Identifying Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the release fork, the release bearing, and the boot (see step 4 on **PRESSURE PLATE AND CLUTCH DISC REMOVAL (5-SPEED MODEL)**).
4. Place the transmission on the transmission jack, and raise it to the engine level.
5. Install the lower transmission mounting bolts.

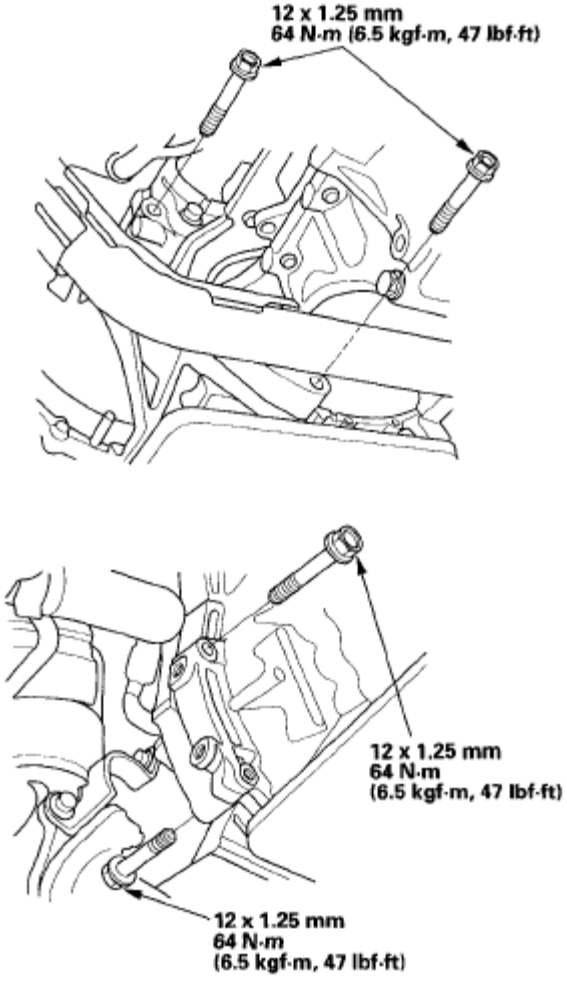


Fig. 32: Identifying Lower Transmission Mounting Bolts (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the clutch cover.

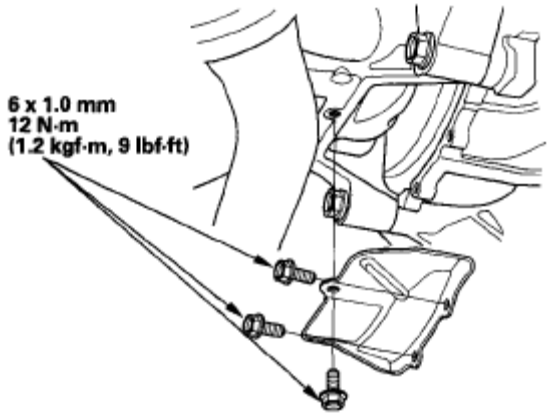


Fig. 33: Identifying Clutch Cover (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the intermediate shaft (see **INTERMEDIATE SHAFT INSTALLATION**).
8. Install the driveshaft inboard joint (see **DRIVESHAFT INSTALLATION**).
9. Support the front subframe with the front subframe adapter and a jack.

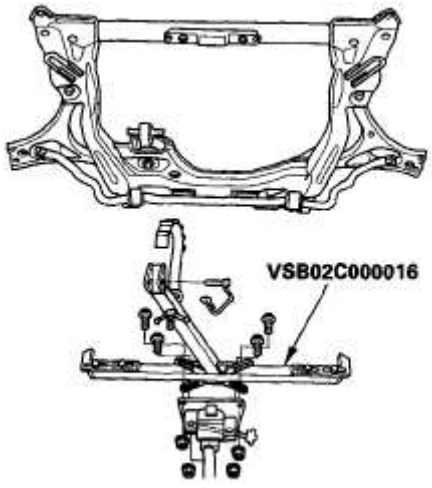


Fig. 34: Identifying Driveshaft Inboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the front subframe (A). Loosely install the new subframe mounting bolts (B).

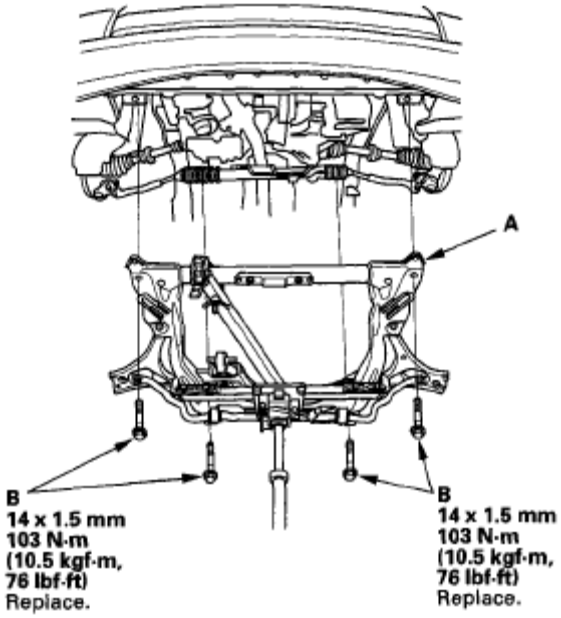


Fig. 35: Installing Front Subframe (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Align the front subframe reference marks (A) to the body (B), as noted during removal. Tighten the subframe mounting bolts to the specified torque.

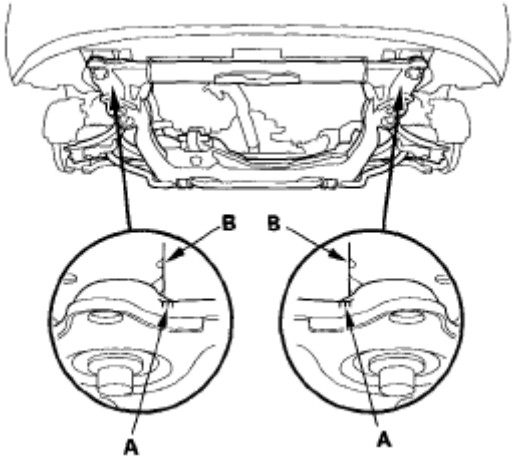


Fig. 36: Aligning Front Subframe Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the lower torque rod mounting bolts.

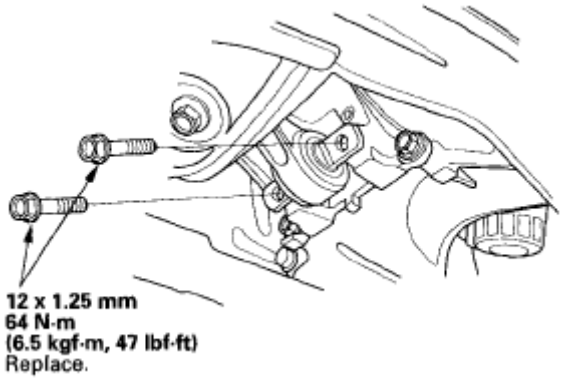


Fig. 37: Installing Lower Torque Rod Mounting Bolts (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the middle subframe mounting bolts.

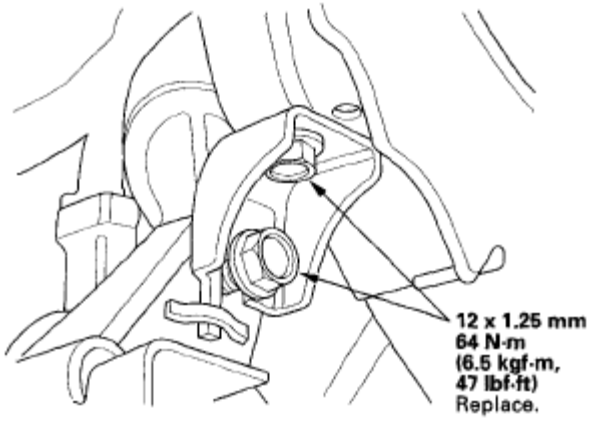


Fig. 38: Identifying Subframe Mounting Bolts (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the steering gearbox stiffner plates (A) and mounting bracket (B). Tighten the mounting bolts to the specified torque.

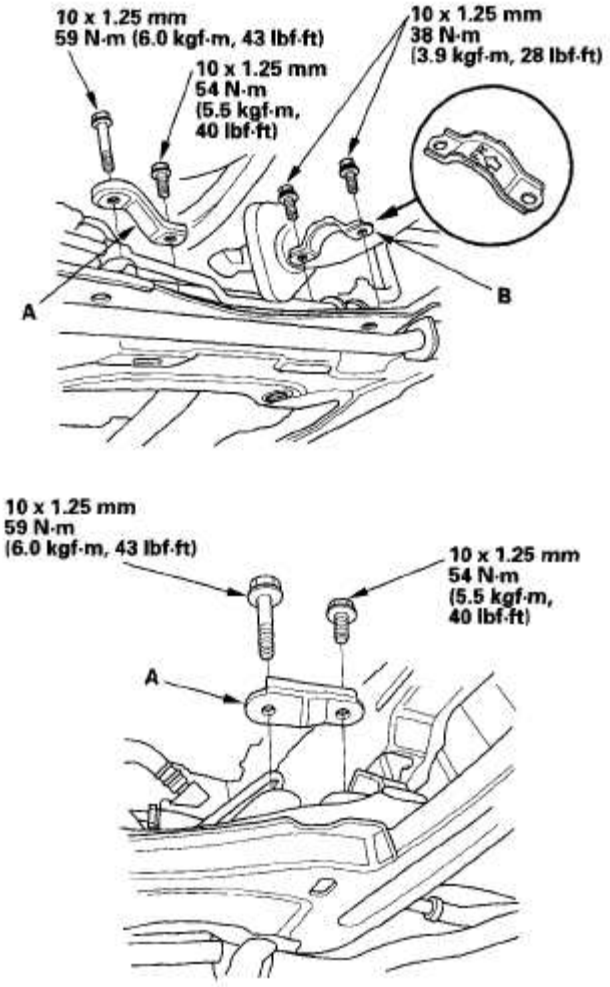


Fig. 39: Installing Steering Gearbox Stiffner Plates (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the steering line bracket (A) and the clip (B).

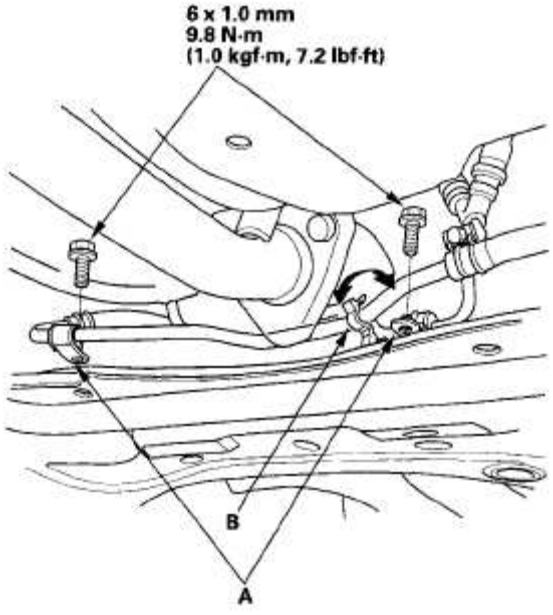


Fig. 40: Identifying Steering Line Bracket And Clip (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Connect the lower arm (see step 7 on **DRIVESHAFT INSTALLATION**).
17. Lower the vehicle on the lift.
18. Install the transmission mounting bracket base (A) and stud bolts (B).

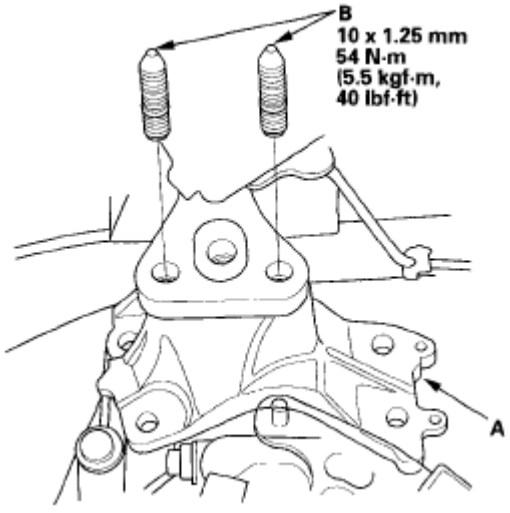


Fig. 41: Identifying Transmission Mounting Bracket Base And Stud Bolts (With Torque Specifications)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the transmission mounting bracket bolts (A). Install the transmission mounting bolt (B) and nuts (C), then install the ground cable (D).

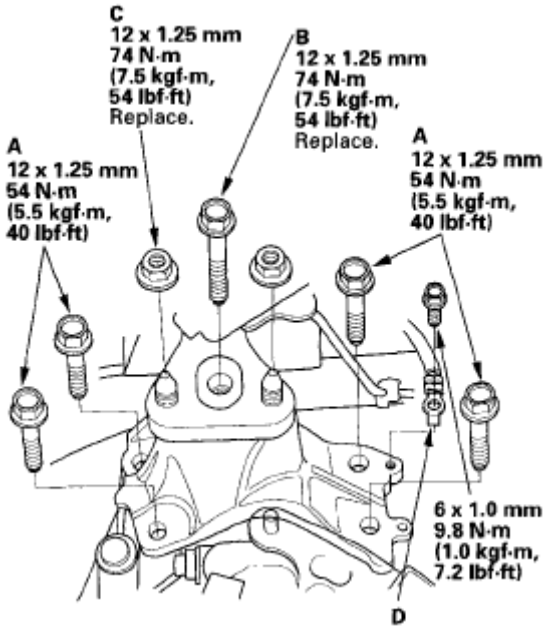


Fig. 42: Identifying Transmission Mounting Bracket Bolts And Nuts (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Raise the vehicle on the lift.
21. Loosen and retighten the lower torque rod mounting bolt.

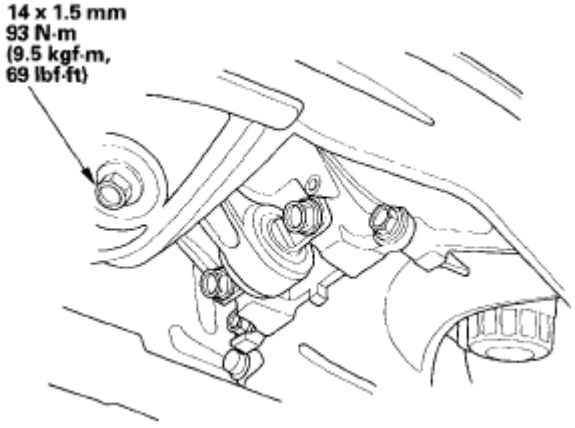


Fig. 43: Identifying Lower Torque Rod Mounting Bolt (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Refill the transmission with the recommended transmission fluid (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**).
23. Install the splash shield.

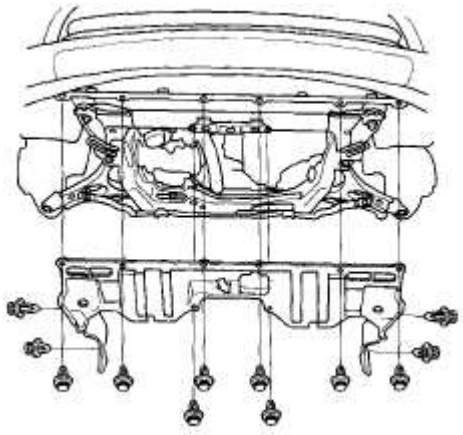


Fig. 44: Locating Splash Shield
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Lower the vehicle on the lift.
25. Tighten the upper torque rod mounting bolt.

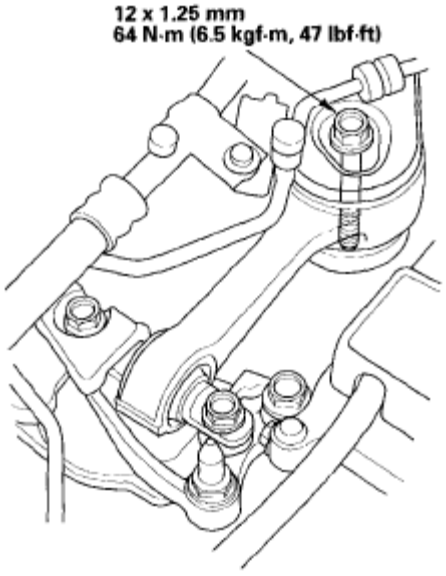


Fig. 45: Tightening Upper Torque Rod Mounting Bolt (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Install the upper transmission mounting bolts.

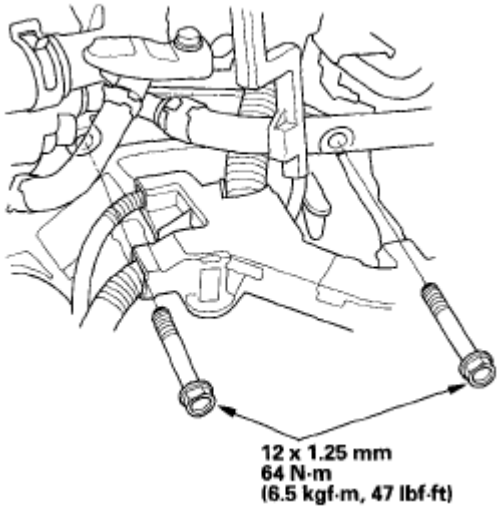


Fig. 46: Installing Upper Transmission Mounting Bolts (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Remove the engine hanger and support eyelet (A) from the engine.

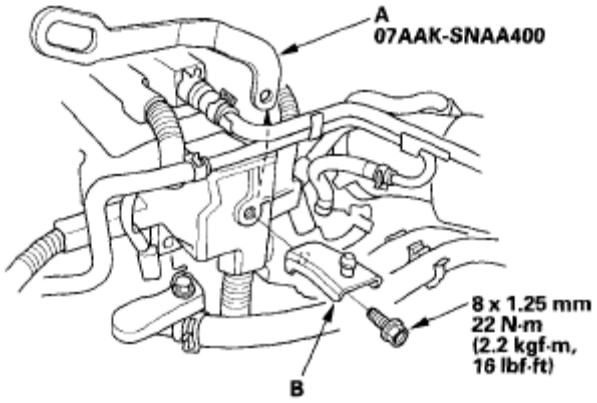


Fig. 47: Identifying Engine Hanger And Support Eyelet (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the air cleaner housing bracket (B) on the cylinder head.
29. Connect the output shaft (countershaft) speed sensor connector (A).

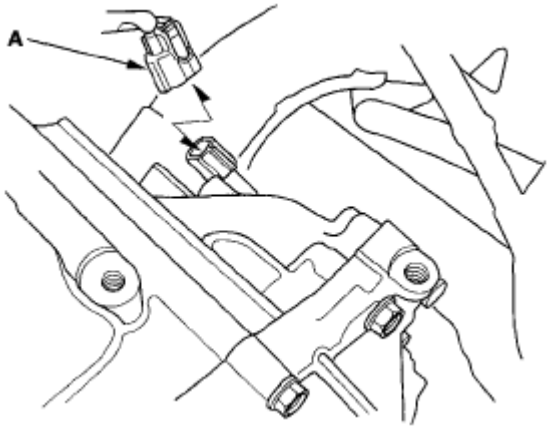


Fig. 48: Locating Output Shaft (Countershaft) Speed Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Apply a light coat of super high temp urea grease (P/N 08798-9002) to the cable ends (A), and the surface of the cable end rubber (B) with silicone grease.

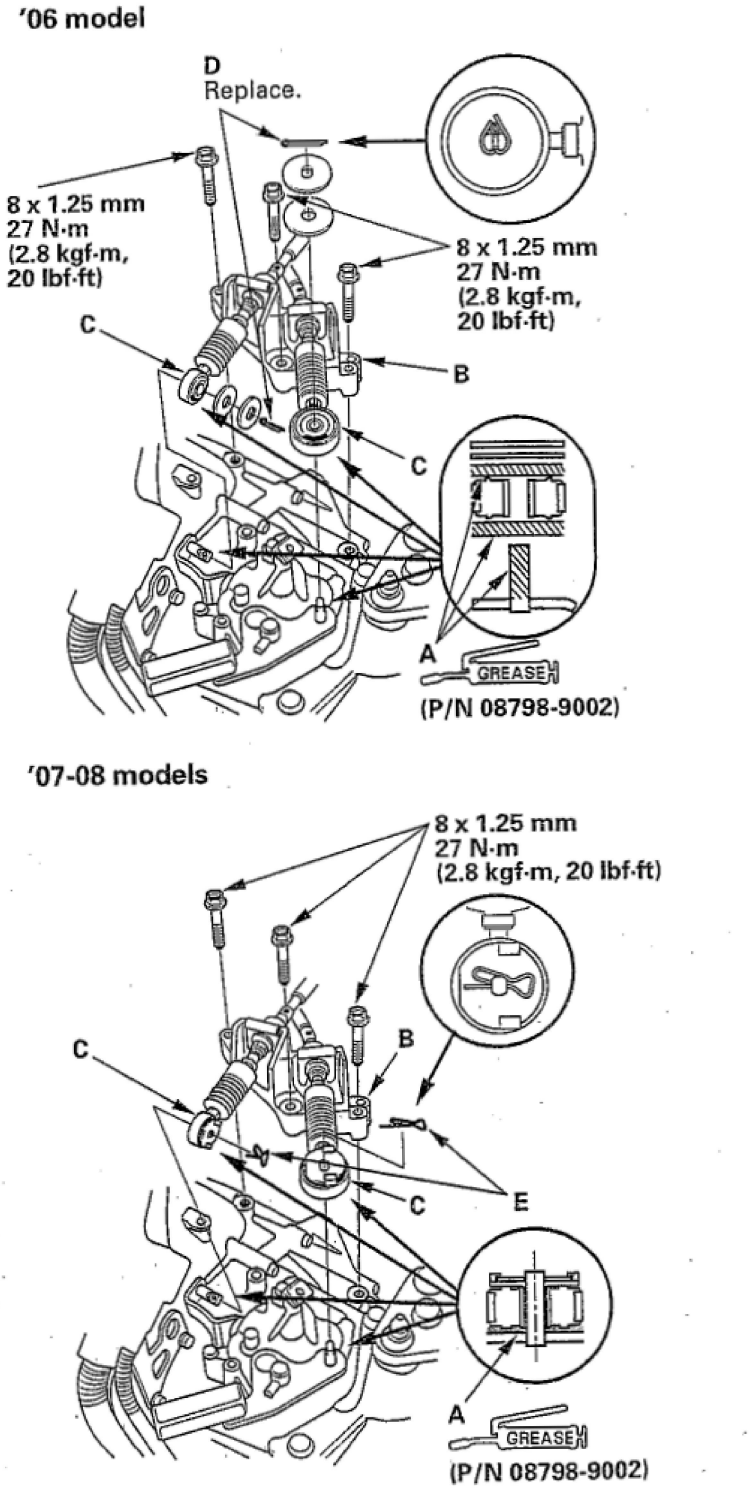


Fig. 49: Identifying Area For Applying Super High Temp Urea Grease (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the cable bracket (C) and the cables (D), then install the new cotter pins (E).
32. Connect the back-up light switch connector (A), then install the engine harness cover (B) and the harness clips (C).

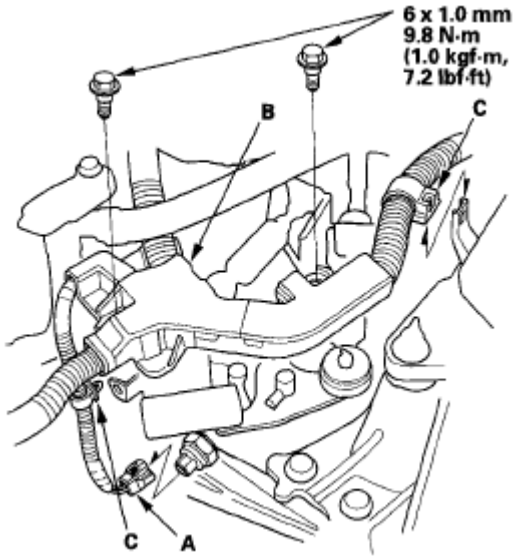


Fig. 50: Identifying Back-Up Light Switch Connector (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Apply super high temp urea grease (P/N 08798-9002) to the end of the slave cylinder rod. Install the slave cylinder (A) then install the clutch line bracket (B). Be careful not to bend the clutch line.

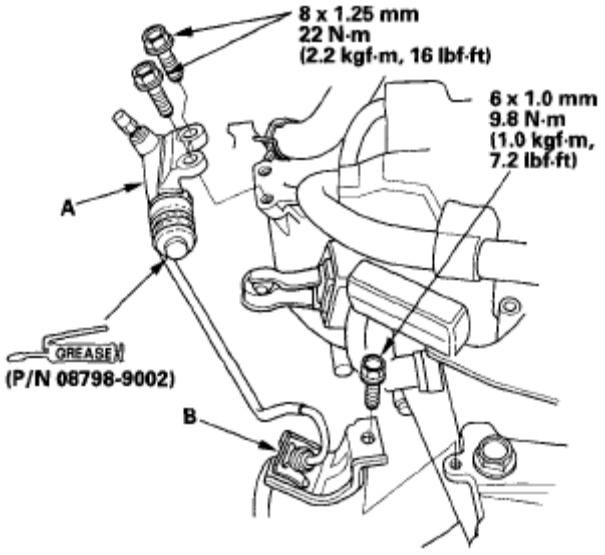


Fig. 51: Identifying Area For Applying Super High Temp Urea Grease (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Install the battery base (A) with the coolant reservoir (B).

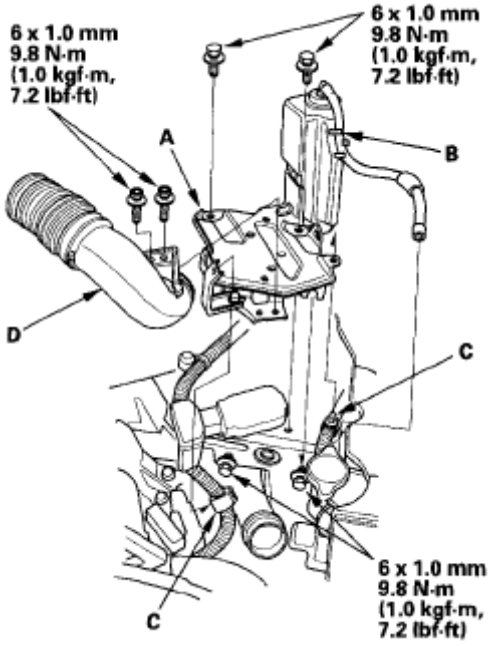
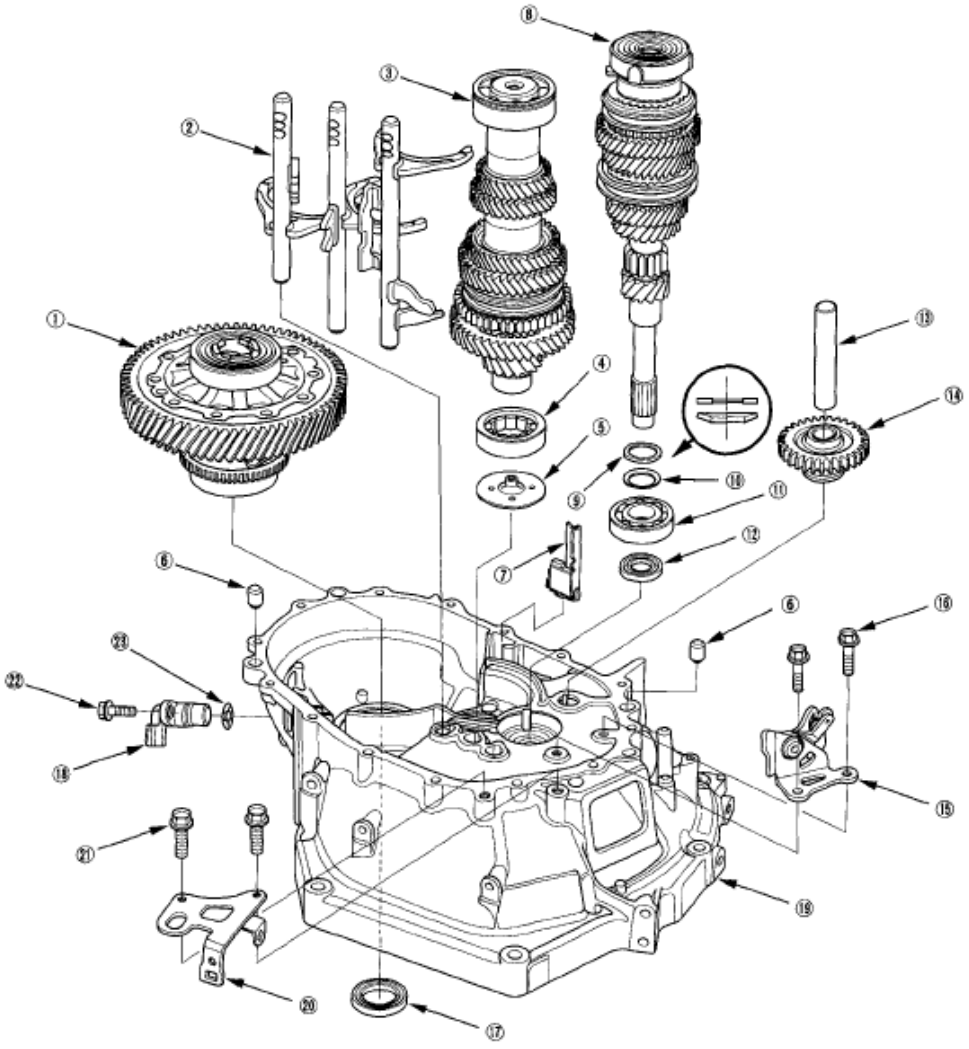


Fig. 52: Identifying Battery Base With Coolant Reservoir (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the harness clips (C) and the intake air duct (D).
36. Install the air cleaner assembly (see **THROTTLE BODY CLEANING**).
37. Install the battery. Clean the battery posts and cable terminals. Connect the positive cable to the battery first, then connect the negative cable, and apply multipurpose grease to prevent corrosion.
38. Install the under-cowl panel and cowl cover (see **FRONT GRILLE COVER REPLACEMENT**).
39. Test-drive the vehicle.
40. Check the change lever and the clutch operation.
41. Check the front wheel alignment (see **WHEEL ALIGNMENT**).
42. Enter the anti-theft code for the audio unit or the navigation system, then enter the audio presets. Set the clock.
43. Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

TRANSMISSION DISASSEMBLY

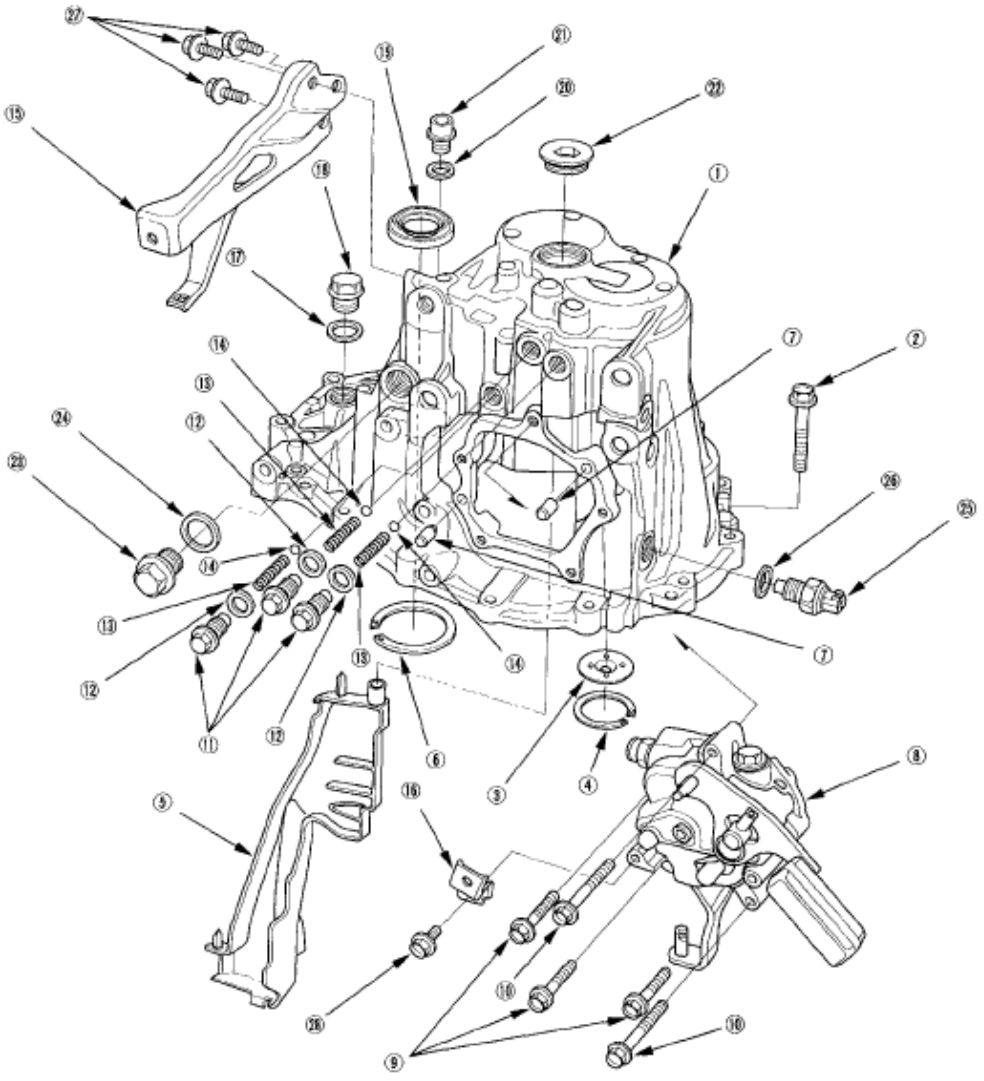
Exploded View - Clutch Housing



① DIFFERENTIAL ASSEMBLY
② SHIFT FORK
③ COUNTERSHAFT ASSEMBLY
④ NEEDLE BEARING
⑤ OIL GUIDE PLATE C
⑥ 14 x 20 mm DOWEL PIN
⑦ MAGNET
⑧ MAINSHAFT ASSEMBLY
⑨ 26 mm WASHER
⑩ 36 mm SPRING WASHER
⑪ BALL BEARING
⑫ 28 x 43 x 7 mm OIL SEAL
Replace.
⑬ REVERSE GEAR SHAFT
⑭ REVERSE IDLER GEAR
⑮ REVERSE SHIFT FORK
⑯ 6 mm SPECIAL BOLT
15 N·m (1.5 kgf·m, 11 lbf·ft)
⑰ 35 x 58 x 8 mm OIL SEAL
Replace.
⑱ OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR
⑲ CLUTCH HOUSING
⑳ TRANSMISSION HANGER
㉑ 8 mm FLANGE BOLT
27 N·m (2.8 kgf·m, 20 lbf·ft)
㉒ 6 mm BOLT
12 N·m (1.2 kgf·m, 9 lbf·ft)
㉓ O-RING
Replace.

Fig. 53: Exploded View Of Clutch Housing (With Torque Specifications) Courtesy of AMERICAN HONDA MOTOR CO., INC.

Exploded View - Transmission Housing



① TRANSMISSION HOUSING
② 8 mm FLANGE BOLT
27 N·m (2.8 kgf·m, 20 lbf·ft)
③ OIL GUIDE PLATE M
④ 52 x 62 mm SHIM
⑤ OIL GUTTER PLATE
⑥ 80 mm SHIM
⑦ 8 x 10 mm DOWEL PIN
⑧ CHANGE LEVER ASSEMBLY
⑨ 6 x 30 mm FLANGE BOLT
12 N·m (1.2 kgf·m, 9 lbf·ft)
⑩ 6 x 45 mm FLANGE BOLT
12 N·m (1.2 kgf·m, 9 lbf·ft)
⑪ DETENT BOLT
22 N·m (2.2 kgf·m, 16 lbf·ft)
⑫ 12 mm WASHER
Replace.
⑬ SPRING
⑭ STEEL BALL
⑮ AIR CLEANER HOUSING BRACKET
⑯ HARNESS BRACKET
⑰ 20 mm WASHER
Replace.
⑱ FILLER PLUG
44 N·m (4.5 kgf·m, 33 lbf·ft)
⑲ 40 x 56 x 8 mm OIL SEAL
Replace.
⑳ 14 mm WASHER
Replace.
㉑ DRAIN PLUG
39 N·m (4.0 kgf·m, 29 lbf·ft)
㉒ 32 mm SEALING CAP
34 N·m (3.5 kgf·m, 25 lbf·ft)
㉓ 20 mm BOLT
44 N·m (4.5 kgf·m, 33 lbf·ft)
㉔ 20 mm WASHER
Replace.
㉕ BACK-UP LIGHT SWITCH
㉖ 18 mm WASHER
Replace.
㉗ 6 mm BOLT
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
㉘ 6 mm BOLT
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)

Fig. 54: Exploded View Of Transmission Housing (With Torque Specifications)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Place the clutch housing on two pieces of wood thick enough to keep the mainshaft from hitting the workbench.

1. Remove the air cleaner housing bracket (A) and the harness bracket (B).

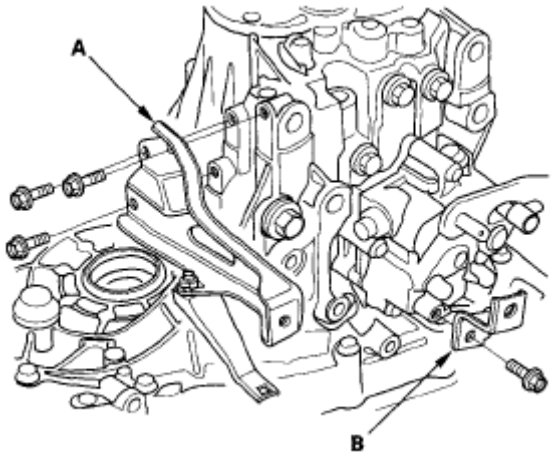


Fig. 55: Identifying Air Cleaner Housing Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the detent bolts (A), springs (B) and steel balls (C).

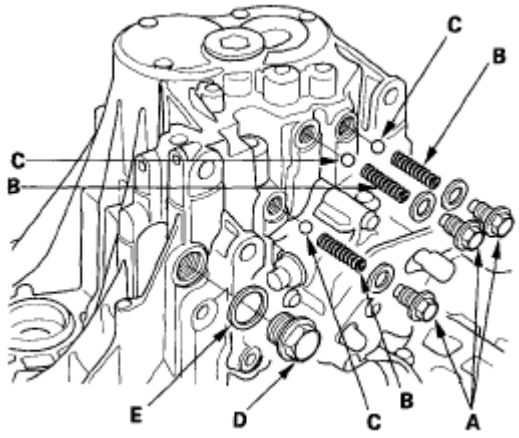


Fig. 56: Identifying Detent Bolts, Springs And Steel Balls
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the 20 mm bolt (D) and 20 mm washer (E).
4. Remove the change lever assembly (A) and the 8x10 mm dowel pins (B).

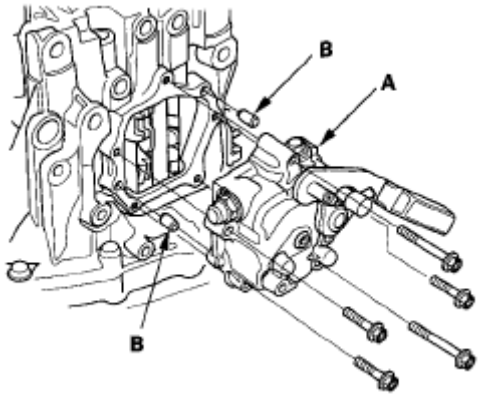


Fig. 57: Identifying Change Lever Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the transmission hanger (A) and back-up light switch (B).

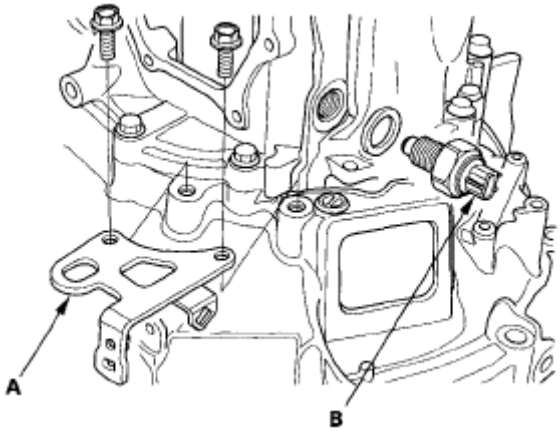


Fig. 58: Identifying Transmission Hanger And Back-Up Light Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the drain plug (A), filler plug (B) and the output shaft (countershaft) speed sensor (C), then remove the O-ring (D).

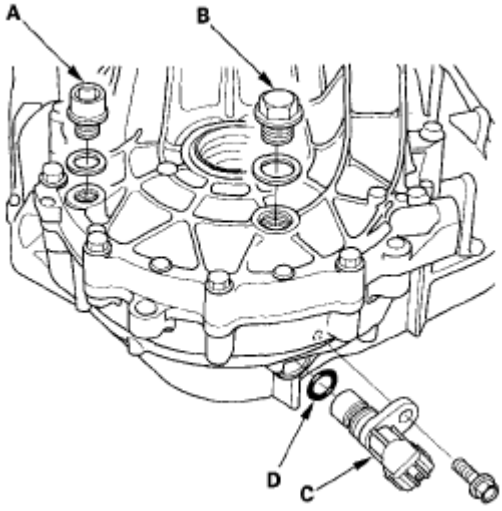


Fig. 59: Identifying Drain Plug And Filler Plug
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the 8 mm flange bolts in a crisscross pattern in several steps.

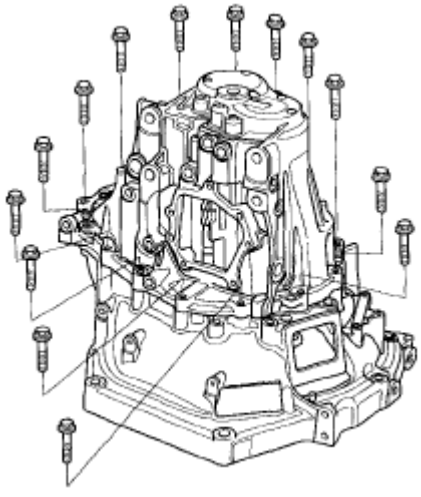


Fig. 60: Identifying Flange Bolts In Crisscross Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the 32 mm sealing cap (A). A,

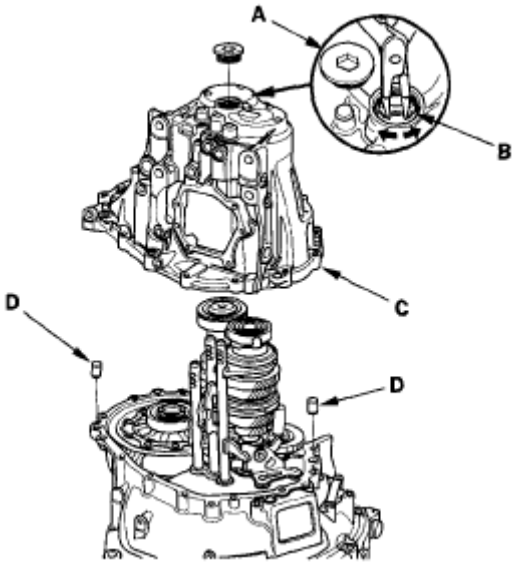


Fig. 61: Identifying Sealing Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Expand the 69 mm snap ring (B) on the countershaft ball bearing, and remove it from the groove using a pair of snap ring pliers.
10. Remove the transmission housing (C) and the two 14 x 20 mm dowel pins (D).
11. Remove the reverse shift fork.

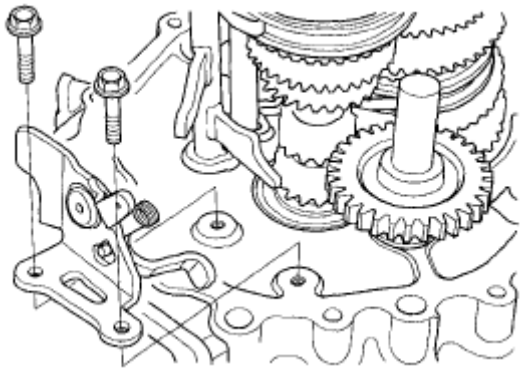


Fig. 62: Identifying Reverse Shift Fork
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the reverse idler gear (A) and reverse gear shaft (B).

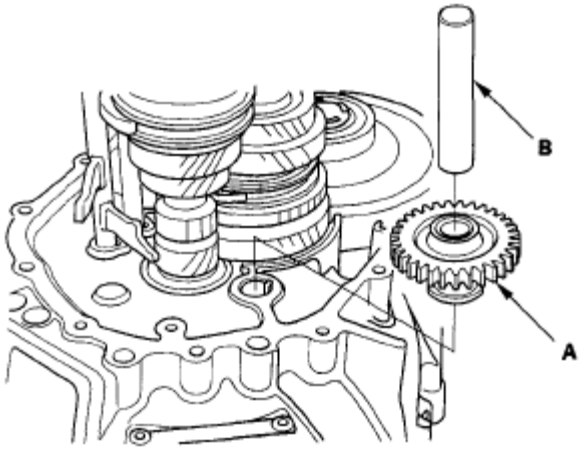


Fig. 63: Identifying Reverse Idler Gear And Reverse Gear Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Apply tape to the mainshaft splines to protect the seal, then remove the mainshaft assembly (A) and countershaft assembly (B) with the shift forks (C) from the clutch housing (D).

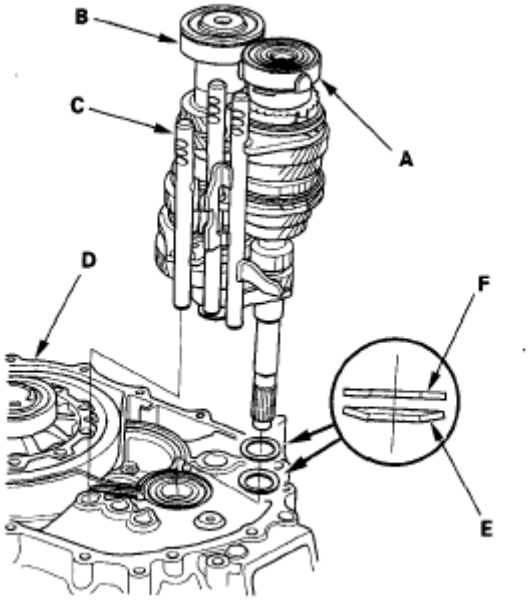


Fig. 64: Identifying Area For Applying Tape To Mainshaft Splines To Protect Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the 36 mm spring washer (E) and 26 mm washer (F).

15. Remove the differential assembly (A) and magnet (B).

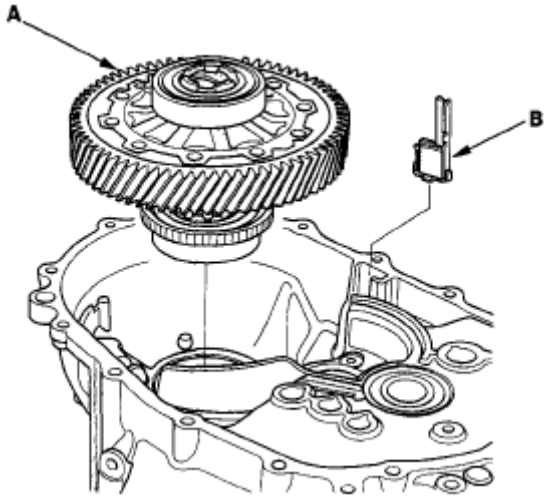


Fig. 65: Identifying Spring Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the oil gutter plate (A), 52 x 62 mm shim (B), and oil guide plate M.

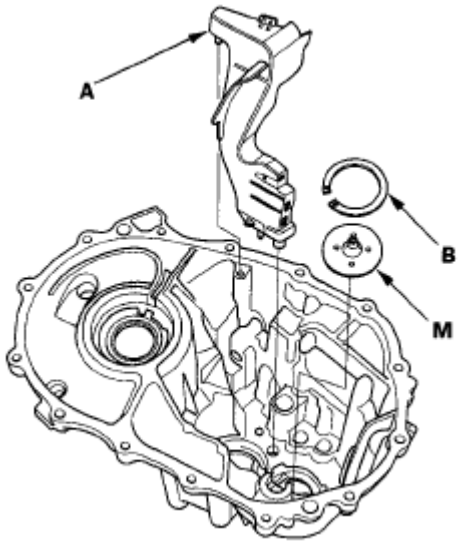


Fig. 66: Identifying Oil Gutter Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REVERSE SHIFT FORK CLEARANCE INSPECTION

1. Measure clearance between the reverse idler gear (A) and the reverse shift fork

(B) with a feeler gauge (C). If the clearance is more than the service limit, go to step 2.

Standard: 0.20-0.60 mm (0.007-0.024 in.)

Service Limit: 1.2 mm (0.047 in.)

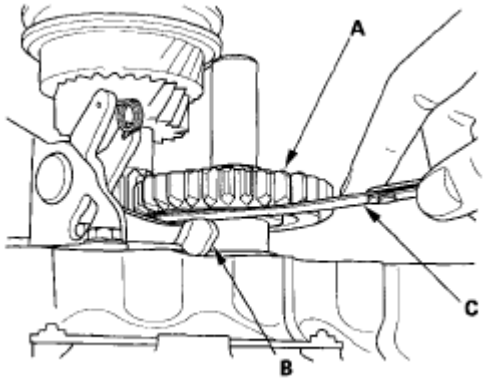


Fig. 67: Measuring Clearance Between Reverse Idler Gear And Reverse Shift Fork
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure width of the reverse shift fork.
   - If the width is not within the standard, replace the reverse shift fork.
   - If the width is within the standard, replace the reverse idler gear.

Standard: 14.7-14.9 mm (0.579-0.587 in.)

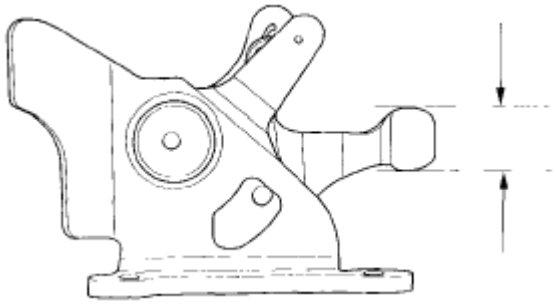


Fig. 68: Identifying Width Of Reverse Shift Fork
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CHANGE LEVER ASSEMBLY DISASSEMBLY/REASSEMBLY

Exploded View

Prior to reassembling, clean all the parts in solvent, dry them, and apply MTF to any contact surface.

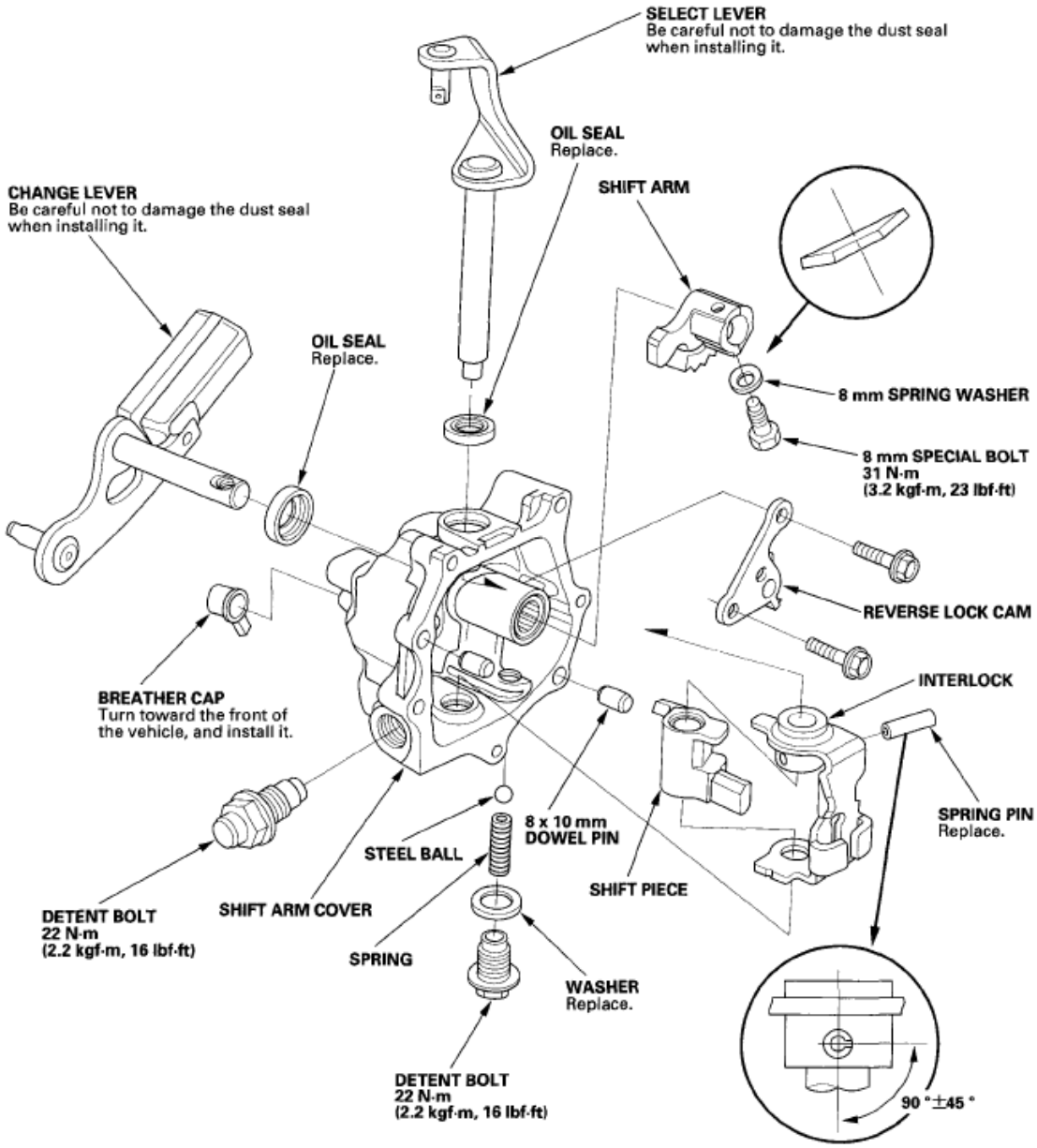


Fig. 69: Exploded View Of Change Lever Assembly (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Attachment, 24 x 26 mm 07746-0010700
- Driver 07749-0010000

1. Remove the breather cap (A), detent bolt (B), washer (C), spring (D), and steel ball (E). Remove the detent bolt (F).

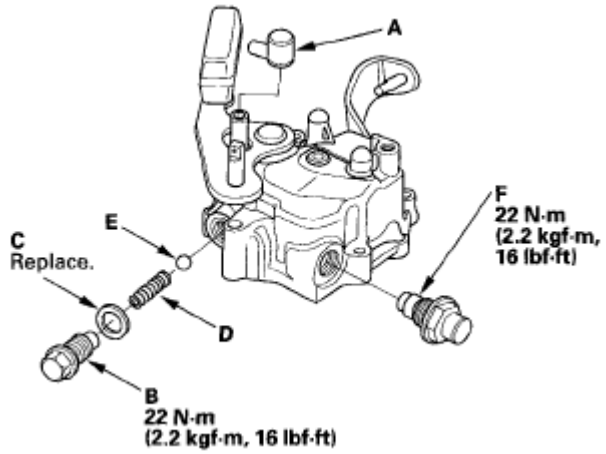


Fig. 70: Identifying Breather Cap, Detent Bolt And Washer (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the special bolt (A) and spring washer (B).

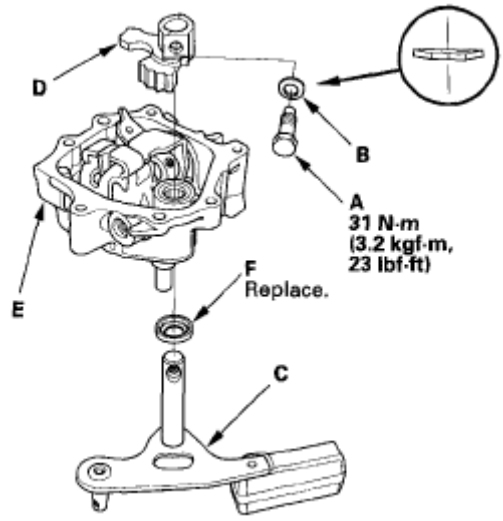


Fig. 71: Identifying Bolt And Spring Washer (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the shift lever (C) and shift arm (D) from the shift arm cover (E).
4. Remove the oil seal (F).
5. Remove the spring pin (A) from the select lever (B).

NOTE: Install the spring pin into the interlock with the groove of the spring pin at the angle shown.

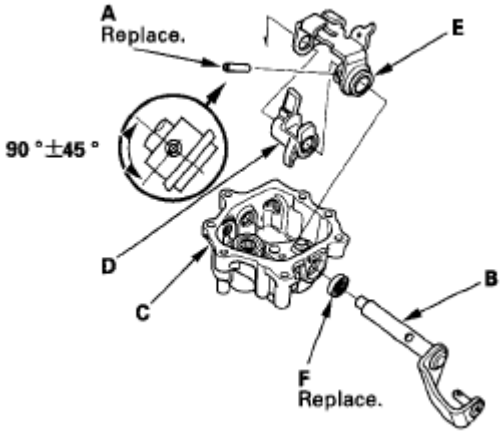


Fig. 72: Identifying Shift Lever And Shift Arm From Shift Arm Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the select lever from the shift arm cover (C), then remove the shift piece (D) and the interlock (E).
7. Remove the oil seal (F).
8. Remove the reverse lock cam (A).

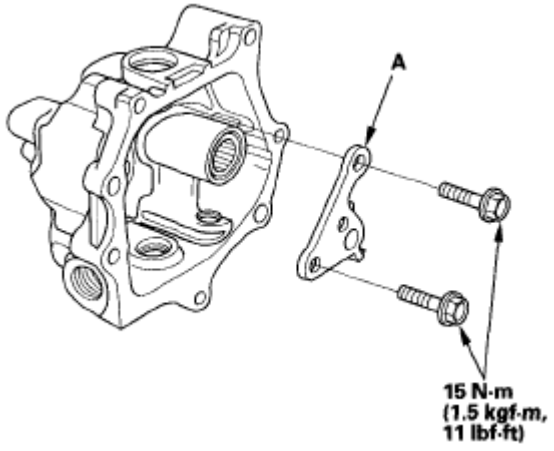


Fig. 73: Identifying Select Lever From Shift Arm Cover (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install in the reverse order of removal.

NOTE: Install the oil seal (A) using the attachment, 24 x 26 mm (B) and driver (C).

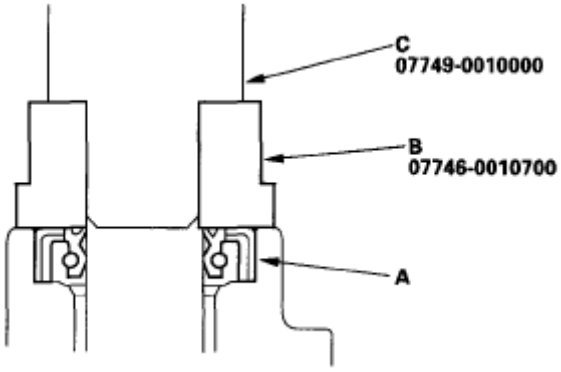


Fig. 74: Installing Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT ARM CLEARANCE INSPECTION

1. Measure clearance between the shift arm (A) and shift piece (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 2.

   Standard: 0.20-0.61 mm (0.008-0.024 in.)

   Service Limit: 0.7 mm (0.028 in.)

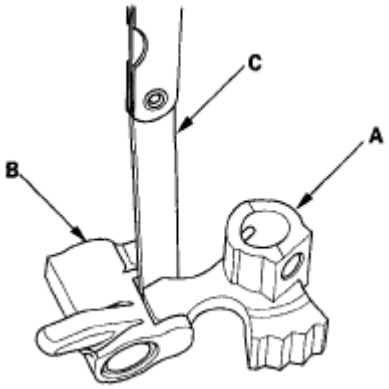


Fig. 75: Measuring Clearance Between Shift Arm And Shift Piece
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure groove of the shift piece.
   - If the groove is not within the standard, replace the shift piece.
   - If the groove is within the standard, replace the shift arm.

   Standard: 16.00-16.20 mm (0.630-0.638 in.)

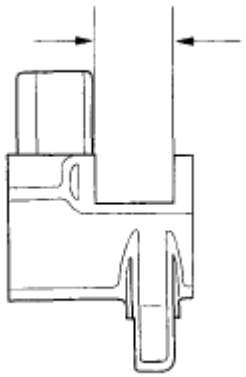


Fig. 76: Identifying Groove Of Shift Piece
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT FORK CLEARANCE INSPECTION

NOTE: The synchro sleeve and synchro hub should be replaced as a set.

1. Measure clearance between each shift fork (A) and its matching synchro sleeve (B). If the clearance exceeds the service limit, go to step 2.

Standard: 0.35-0.65 mm (0.014-0.026 in.)

Service Limit: 1.0 mm (0.039 in.)

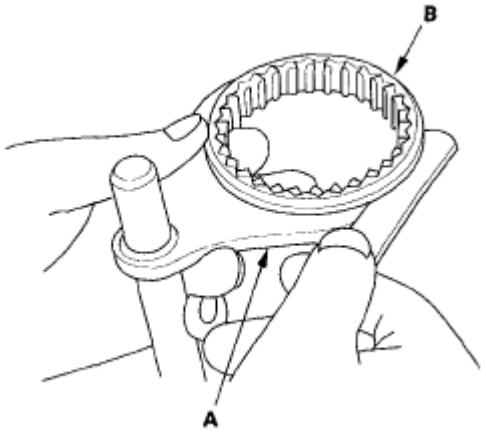


Fig. 77: Measuring Clearance Between Shift Fork And Matching Synchro Sleeve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure thickness of the shift fork fingers.
   - If the thickness is not within the standard, replace the shift fork.
   - If the thickness is within the standard, replace the synchro sleeve and synchro hub as a set.

Standard:

1st/2nd shift fork: 6.7-6.9 mm (0.26-0.27 in.)

3rd/4th, 5th shift fork: 7.4-7.6 mm (0.29-0.30 in.)

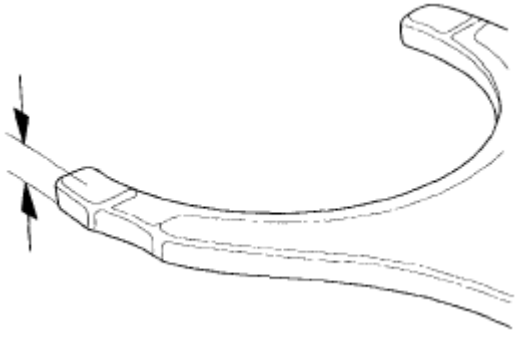


Fig. 78: Identifying Thickness Of Shift Fork Fingers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure clearance between the shift fork (A) and the shift piece (B). If the clearance exceeds the standard, go to step 4.

   Standard: 0.2-0.5 mm (0.008-0.020 in.)

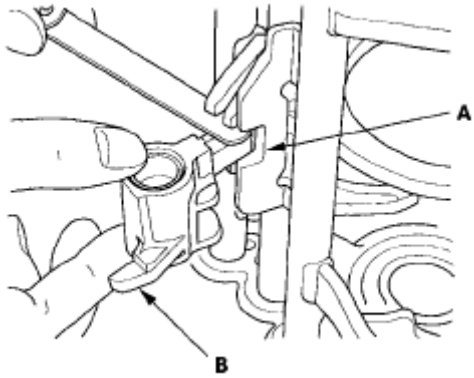


Fig. 79: Measuring Clearance Between Shift Fork And Shift Piece
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure width of the shift piece.
   - If the width is not within the standard, replace the shift piece.
   - If the width is within the standard, replace the shift fork.

   Standard: 15.9-16.0 mm (0.626-0.630 in.)

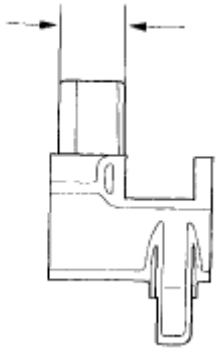


Fig. 80: Identifying Width Of Shift Piece
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT FORK DISASSEMBLY/REASSEMBLY

Prior to reassembling, clean all the parts in solvent, dry them, and apply MTF to any contact surfaces.

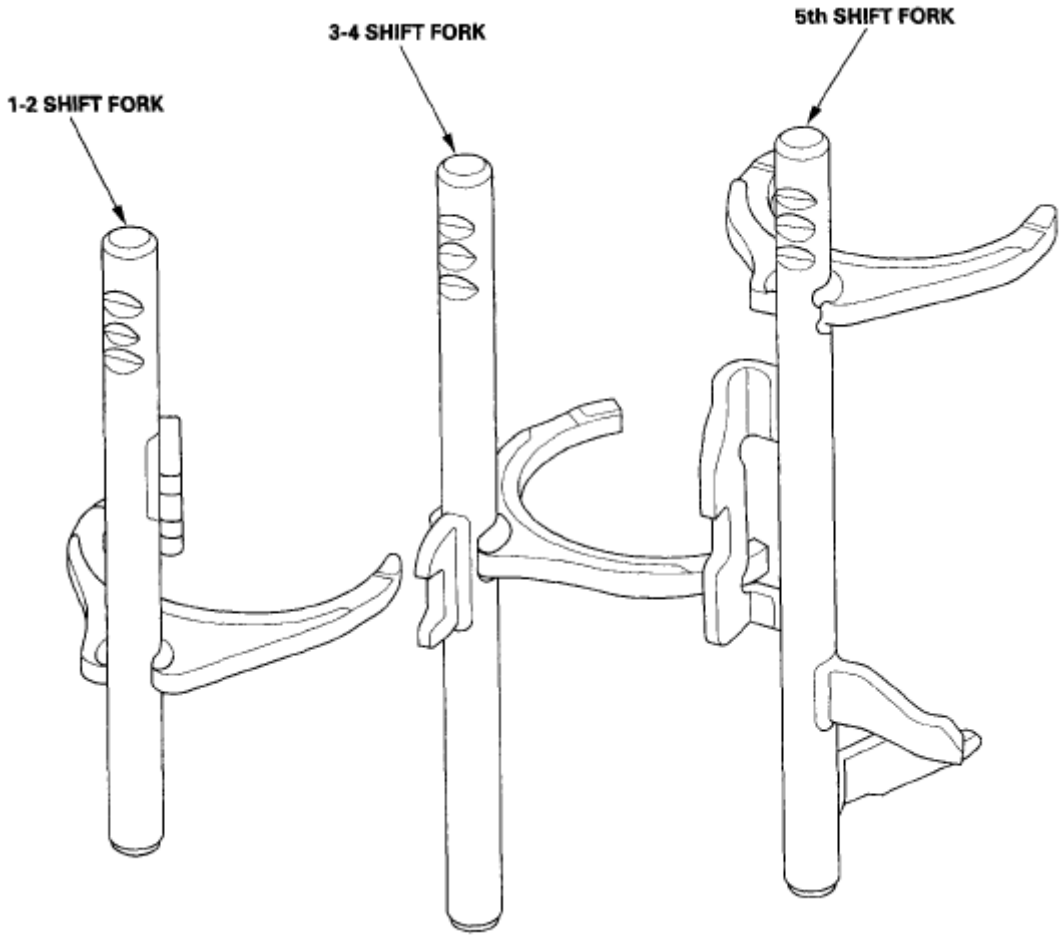


Fig. 81: Identifying Shift Fork Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT ASSEMBLY CLEARANCE INSPECTION

NOTE: If replacement is required, always replace the synchro sleeve and synchro hub as a set.

1. Support the bearing inner race with an appropriate sized socket (A), and push down on the mainshaft (B).

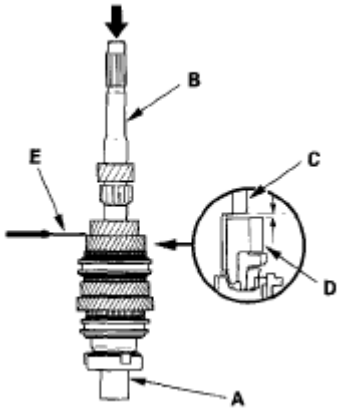


Fig. 82: Identifying Bearing Inner Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure clearance between 2nd gear (C) and 3rd gear (D) with a feeler gauge (E).
   - If the clearance is more than the service limit, go to step 3.
   - If the clearance is within the service limit, go to step 4.

   Standard: 0.06-0.21 mm (0.002-0.008 in.)

   Service Limit: 0.30 mm (0.012 in.)

3. Measure thickness of 3rd gear.
   - If the thickness is less than the service limit, replace 3rd gear.
   - If the thickness is within the service limit, replace the 3rd/4th synchro hub and 3rd/4th synchro sleeve as a set.

   Standard: 27.02-27.07 mm (1.064-1.066 in.)

   Service Limit: 26.95 mm (1.061 in.)

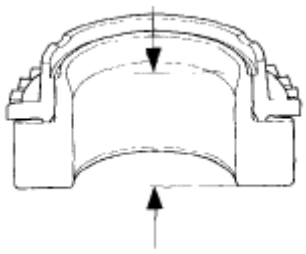


Fig. 83: Identifying Thickness Of 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure clearance between 4th gear (A) and the distance collar (B) with a dial indicator (C). If the clearance is more than the service limit, go to step 5.

   Standard: 0.06-0.19 mm (0.002-0.007 in.)

   Service Limit: 0.28 mm (0.011 in.)

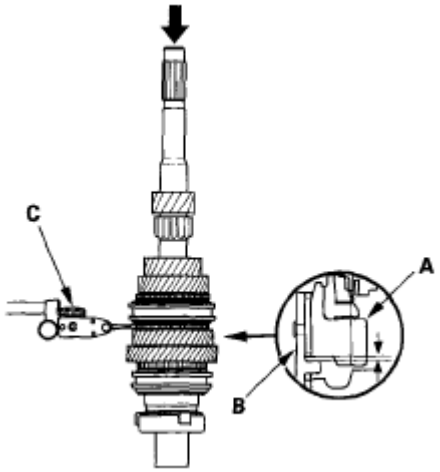


Fig. 84: Identifying Clearance Between 4th Gear And Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure length (1) of the distance collar as shown
   - If the length (1) is not within the standard, replace the distance collar.
   - If the length (1) is within the standard, go to step 6.

   Standard: 22.53-22.56 mm (0.887-0.888 in.)

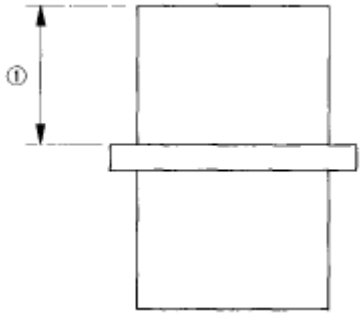


Fig. 85: Identifying Length Of Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure thickness of 4th gear.
   - If the thickness is less than the service limit, replace 4th gear.
   - If the thickness is within the service limit, replace the 3rd/4th synchro hub and 3rd/4th synchro sleeve as a set.

   Standard: 25.52-25.57 mm (1.005-1.007 in.)

   Service Limit: 25.45 mm (1.002 in.)

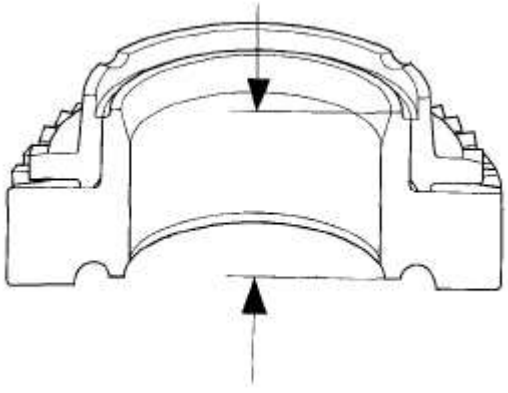


Fig. 86: Identifying Thickness Of 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure clearance between the distance collar (A) and 5th gear (B) with a dial indicator (C). If the clearance is more than the service limit, go to step 8.

   Standard: 0.06-0.14 mm (0.002-0.006 in.)

   Service Limit: 0.23 mm (0.009 in.)

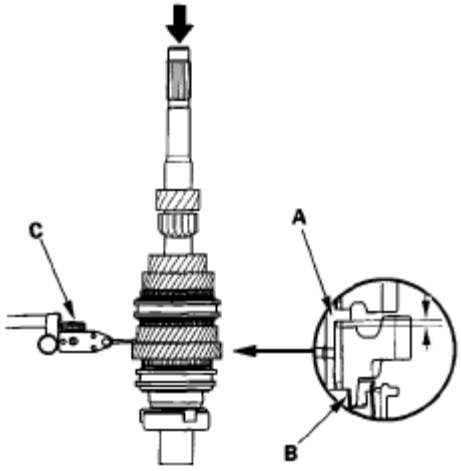


Fig. 87: Identifying Clearance Between Distance Collar And 5th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Measure length (1) of the distance collar as shown
   - If the length (1) is not within the standard, replace the distance collar.
   - If the length (2) is within the standard, go to step 9.

   Standard: 22.53-22.56 mm (0.887-0.888 in.)

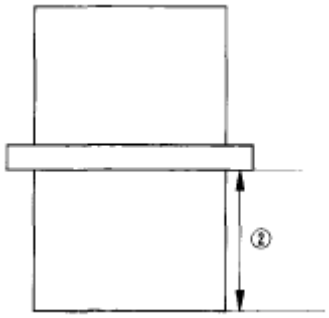


Fig. 88: Identifying Length Of Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure thickness of 5th gear.
   - If the thickness is less than the service limit, replace 5th gear.
   - If the thickness is within the service limit, replace the 5th synchro hub and 5th synchro sleeve as a set.

   Standard: 22.42-22.47 mm (0.883-0.885 in.)

Service Limit: 22.35 mm (0.880 in.)

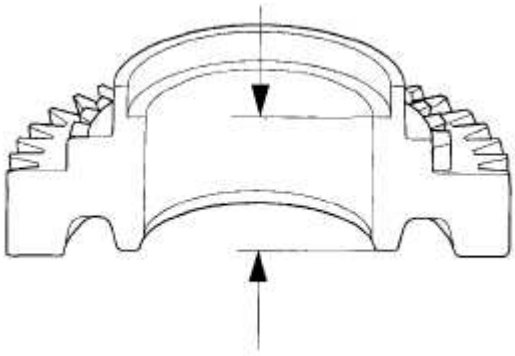


Fig. 89: Identifying Thickness Of 5th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Measure length of the MBS distance collar.

    If the length is not within the standard, replace the MBS distance collar.

    Standard: 24.03-24.08 mm (0.946-0.948 in)

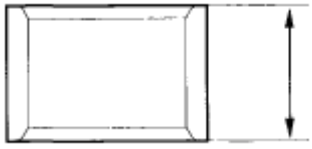


Fig. 90: Identifying Length Of MBS Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT DISASSEMBLY

1. Support 5th gear (A) on steel blocks, and press the mainshaft out of the 5th synchro hub (B) and ball bearing (C).

    NOTE: Do not use a jaw-type puller; it can damage the gear teeth.

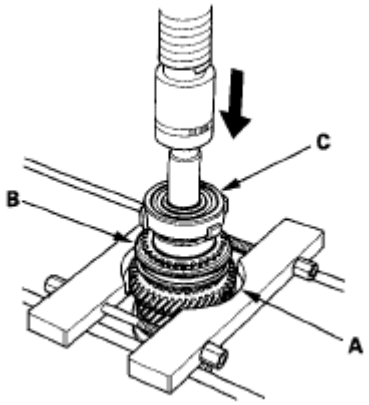


Fig. 91: Supporting 5th Gear On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Support 3rd gear (A) on steel blocks, and press the mainshaft out of the 3rd/4th synchro hub (B).

NOTE: Do not use a jaw-type puller; it can damage the gear teeth.

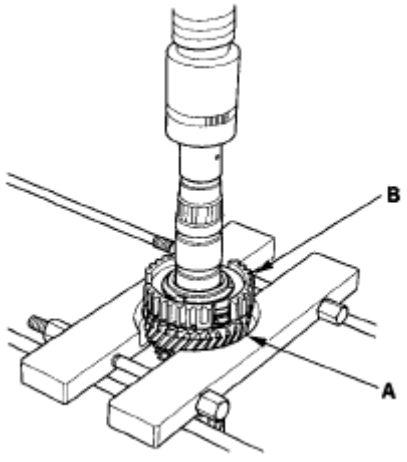


Fig. 92: Identifying 3rd Gear On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT INSPECTION

1. Inspect the gear and bearing contact areas for wear and damage, then measure the mainshaft at points A, B, C, D, and E. If any part of the mainshaft is less than the service limit, replace it.

Standard:

A. **Ball Bearing Contact Area (Transmission Housing Side): 24.987-25.000 mm (0.9837-0.9843 in.)**
B. **Distance Collar Contact Area: 28.992-29.005 mm (1.1414-1.1419 in.)**
C. **Needle Bearing Contact Area: 34.984-35.000 mm (1.3773-1.3780 in.)**
D. **Ball Bearing Contact Area (Clutch Housing Side): 25.977-25.990 mm (1.0227-1.0232 in.)**
E. **Bushing Contact Area: 18.800-18.850 mm (0.7402-0.7421 in.)**

Service Limit:

A. **24.93 mm (0.981 in.)**
B. **28.93 mm (1.139 in.)**
C. **34.93 mm (1.375 in.)**
D. **25.92 mm (1.020 in.)**
E. **18.75 mm (0.738 in.)**

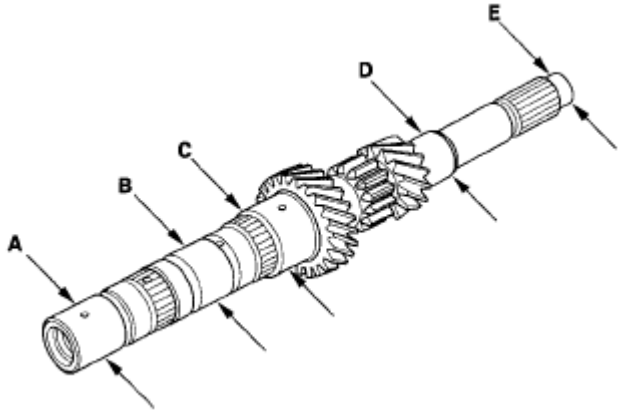


Fig. 93: Identifying Main Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the runout by supporting both ends of the mainshaft. Rotate the mainshaft two complete turns while measuring with a dial gauge. If the runout is more than the service limit, replace the mainshaft.

Standard: 0.02 mm (0.001 in.) max.

Service Limit: 0.05 mm (0.002 in.)

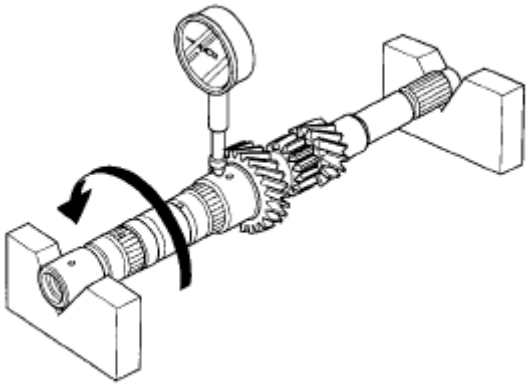


Fig. 94: Identifying Mainshaft Runout
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT REASSEMBLY

Exploded View

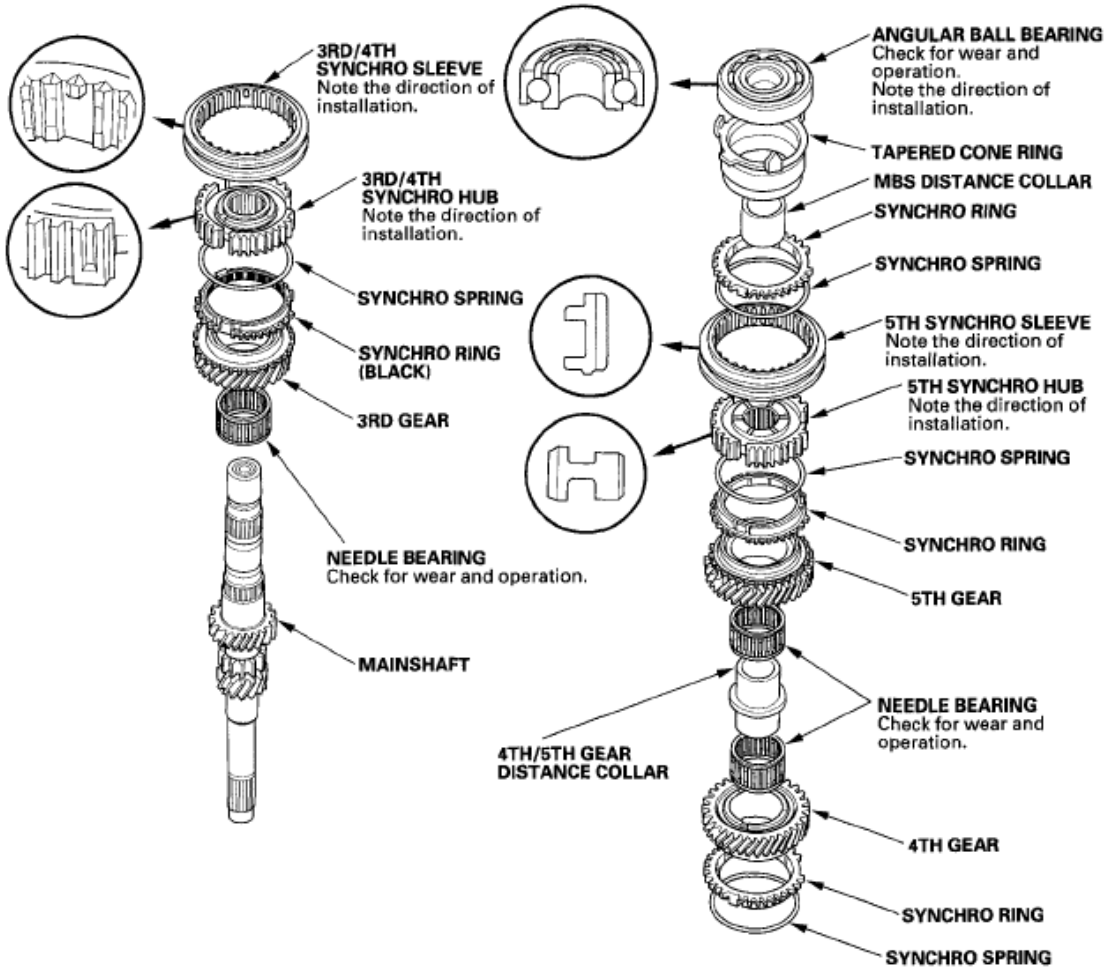


Fig. 95: Exploded View Of Mainshaft Reassembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Driver, 40 mm I.D. 07746-0030100
- Attachment, 30 mm I.D. 07746-0030300

NOTE: Refer to the Exploded View, as needed, during this procedure.

1. Clean all the parts in solvent, dry them, and apply MTF to all contact surfaces except the 3rd/4th and 5th synchro hubs.
2. Install the needle bearing and 3rd gear on the mainshaft.

3. Install the 3rd gear synchro ring and synchro spring on the shaft.

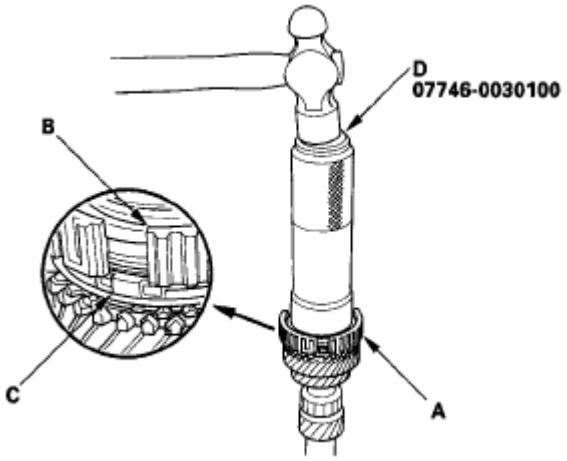


Fig. 96: Installing 3rd Gear Synchro Ring And Synchro Spring On Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the 3rd/4th synchro hub (A) by aligning the synchro ring fingers (B) with the grooves in the 3rd/4th synchro hub (C).
5. Install the 3rd/4th synchro hub using the 40 mm I.D. driver (D).
6. Install the 3rd/4th synchro sleeve (A) by aligning the stops (B) of the 3rd/4th synchro sleeve and 3rd/4th synchro hub. After installing, check the operation of the 3rd/4th synchro hub set.

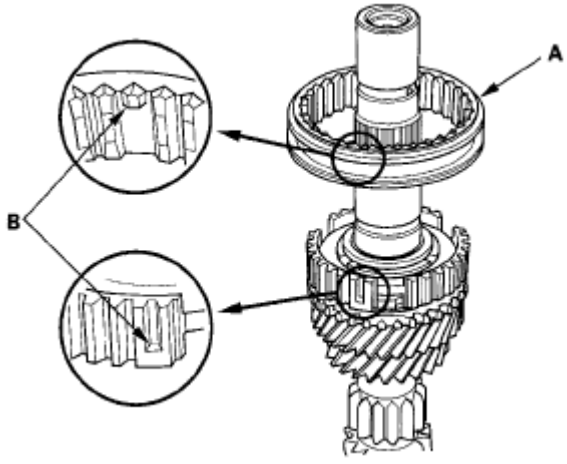


Fig. 97: Locating 3rd/4th Synchro Sleeve By Aligning Stops
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the 4th gear synchro spring and synchro ring, 4th gear and needle bearing, the 4th/5th gear distance collar, and 5th gear and its needle bearing on the shaft.
8. Install the 5th gear synchro ring and synchro spring on the shaft.
9. Install the 5th synchro hub (A) using the 40 mm I.D. driver (B).

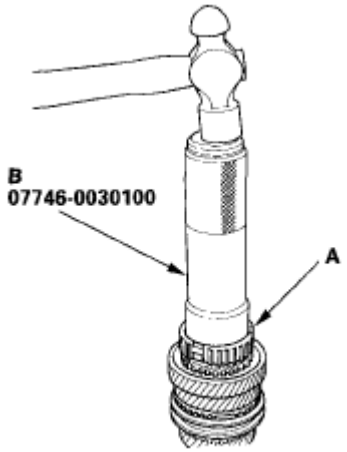


Fig. 98: Installing 5th Synchro Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the 5th synchro sleeve.
11. Install the MBS distance collar and the tapered cone ring.
12. Install the new angular ball bearing (A) using 40 mm I.D. driver (B) and 30 mm I.D. attachment (C).

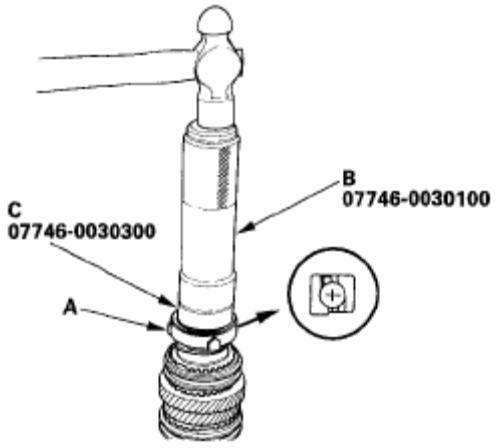


Fig. 99: Installing Angular Ball Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT ASSEMBLY CLEARANCE INSPECTION

1. Measure clearance between 1st gear (A) and the distance collar (B) with a feeler gauge (C). If the clearance is more than the service limit, go to step 2.

   Standard: 0.06-0.21 mm (0.002-0.008 in.)

   Service Limit: 0.25 mm (0.010 in.)

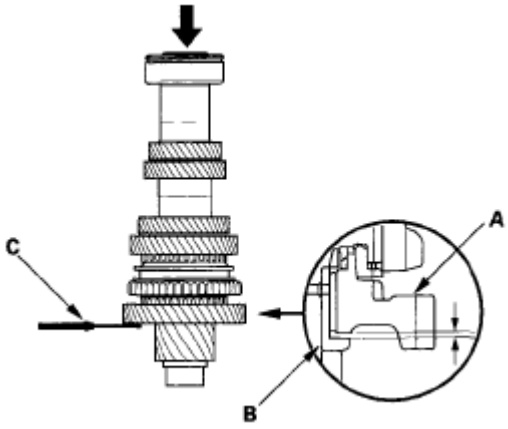


Fig. 100: Measuring Clearance Between 1st Gear And Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure length of the distance collar as shown.
   - If the length is not within than the standard, replace the distance collar.
   - If the length is within the standard, go to step 3.

   Standard: 21.53-21.58 mm (0.843-0.849 in.)

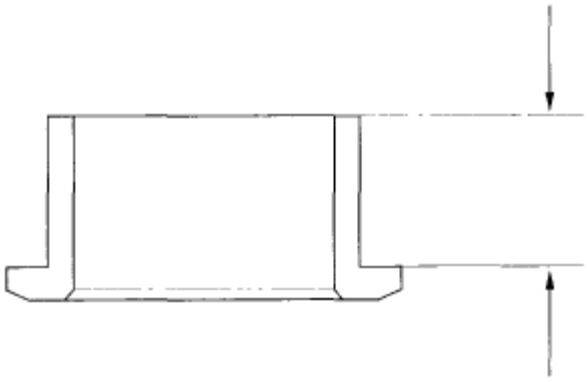


Fig. 101: Identifying Length Of Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure thickness of 1st gear.
   - If the thickness is less than the service limit, replace 1st gear.
   - If the thickness is within the service limit, replace the 1st/2nd synchro hub and reverse gear as a set.

   Standard: 27.42-27.47 mm (1.080-1.081 in.)

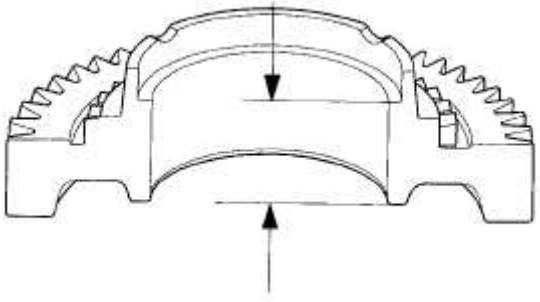


Fig. 102: Identifying Thickness Of 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure clearance between 2nd gear (A) and 3rd gear (B) with a feeler gauge (C). If the clearance is more than the service limit, go to step 5.

   Standard: 0.06-0.14 mm (0.02-0.006 in.)

   Service Limit: 0.23 mm (0.009 in.)

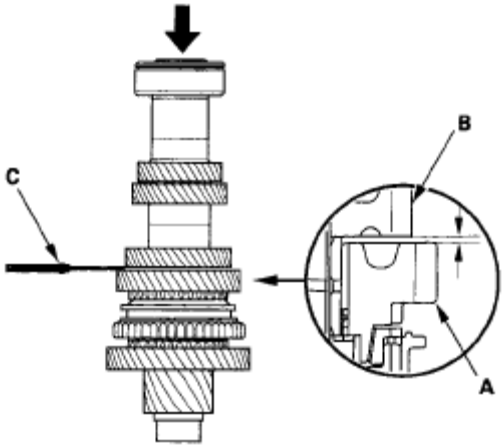


Fig. 103: Measuring Clearance Between 2nd Gear And 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure length of the distance collar.
   - If the length is not within the standard, replace the distance collar.
   - If the length is within the standard, go to step 6.

   Standard: 26.53-26.56 mm (1.044-1.046 in.)

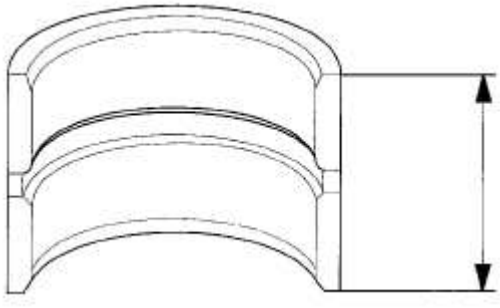


Fig. 104: Identifying Length Of Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure thickness 2nd gear.
   - If the thickness is less than the service limit, replace 2nd gear.
   - If the thickness is within the service limit, replace the 1st/2nd synchro hub and reverse gear as a set.

   Standard: 26.42-26.47 mm (1.040-1.042 in.)

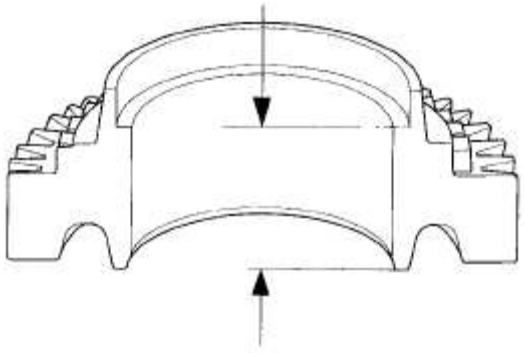


Fig. 105: Identifying Thickness 2nd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT DISASSEMBLY

1. Securely clamp the countershaft assembly in a bench vise with wood blocks.

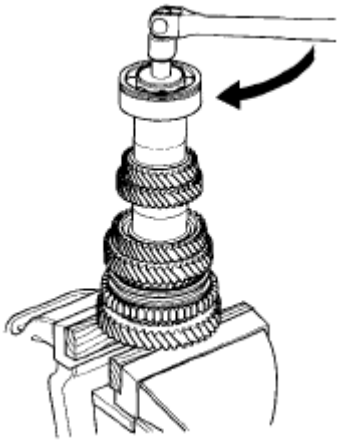


Fig. 106: Clamping Countershaft Assembly In Bench Vise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the special bolt (left-hand threads).
3. Support ball bearing (A) on steel blocks (B), then use a press (C) and an attachment (D) to press the countershaft out of the ball bearing.

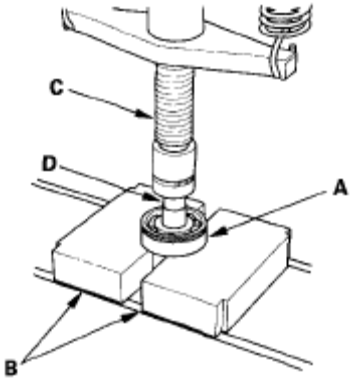


Fig. 107: Supporting Ball Bearing On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the 32 mm shim and distance collar.
5. Support 4th gear (A) on steel blocks (B), then use a press (C) and an attachment (D) to press the countershaft (E) out of 5th gear.

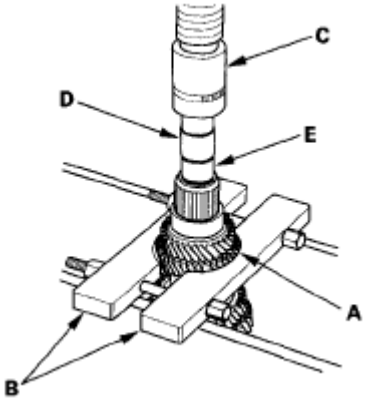


Fig. 108: Supporting 4th Gear On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Support 2nd gear (A) on steel blocks (B), then use a press (C) and an attachment (D) to press the countershaft (E) out of 3rd gear.

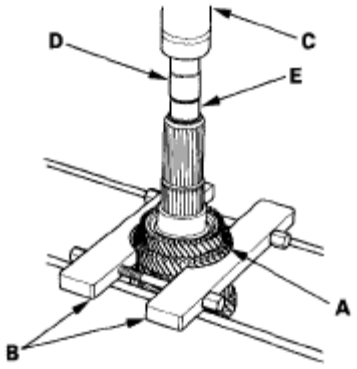


Fig. 109: Supporting 2nd Gear On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Support 1st gear (A) on steel blocks (B), then use a press (C) and an attachment (D) to press the countershaft (E) out of the 1st/2nd synchro hub.

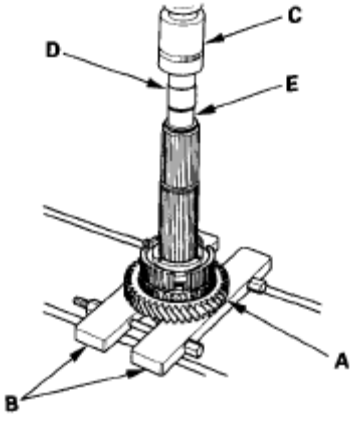


Fig. 110: Supporting 1st Gear On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT INSPECTION

1. Inspect the gear and bearing contact areas for wear and damage, then measure countershaft at points A, B, and C. If any part of the countershaft is less than the service limit, replace it.

   Standard:

   A. **Ball Bearing Contact Area (Transmission Housing Side): 26.020-26.033 mm (1.0244-1.0249 in.)**

B. **Distance Collar Contact Area: 38.987-39.000 mm (1.5349-1.5354 in.)**
C. **Needle Bearing Contact Area (Clutch Housing Side): 34.000-34.015 mm (1.3386-1.3392 in.)**

Service Limit:

A. **25.97 mm (1.022 in.)**
B. **38.94 mm (1.533 in.)**
C. **33.95 mm (1.337 in.)**

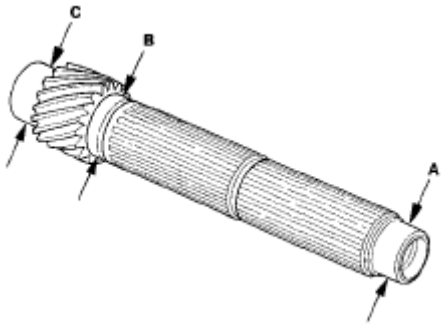


Fig. 111: Identifying Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the runout by supporting both ends of the countershaft. Rotate the countershaft two complete turns while measuring with a dial gauge. If the runout is more than the service limit, replace the countershaft.

Standard: 0.02 mm (0.001 in.). max

Service Limit: 0.05 mm (0.002 in.)

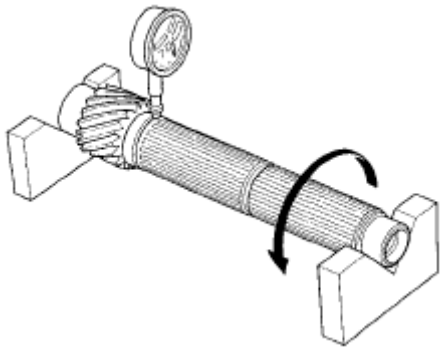


Fig. 112: Checking Countershaft Runout
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT REASSEMBLY

Exploded View

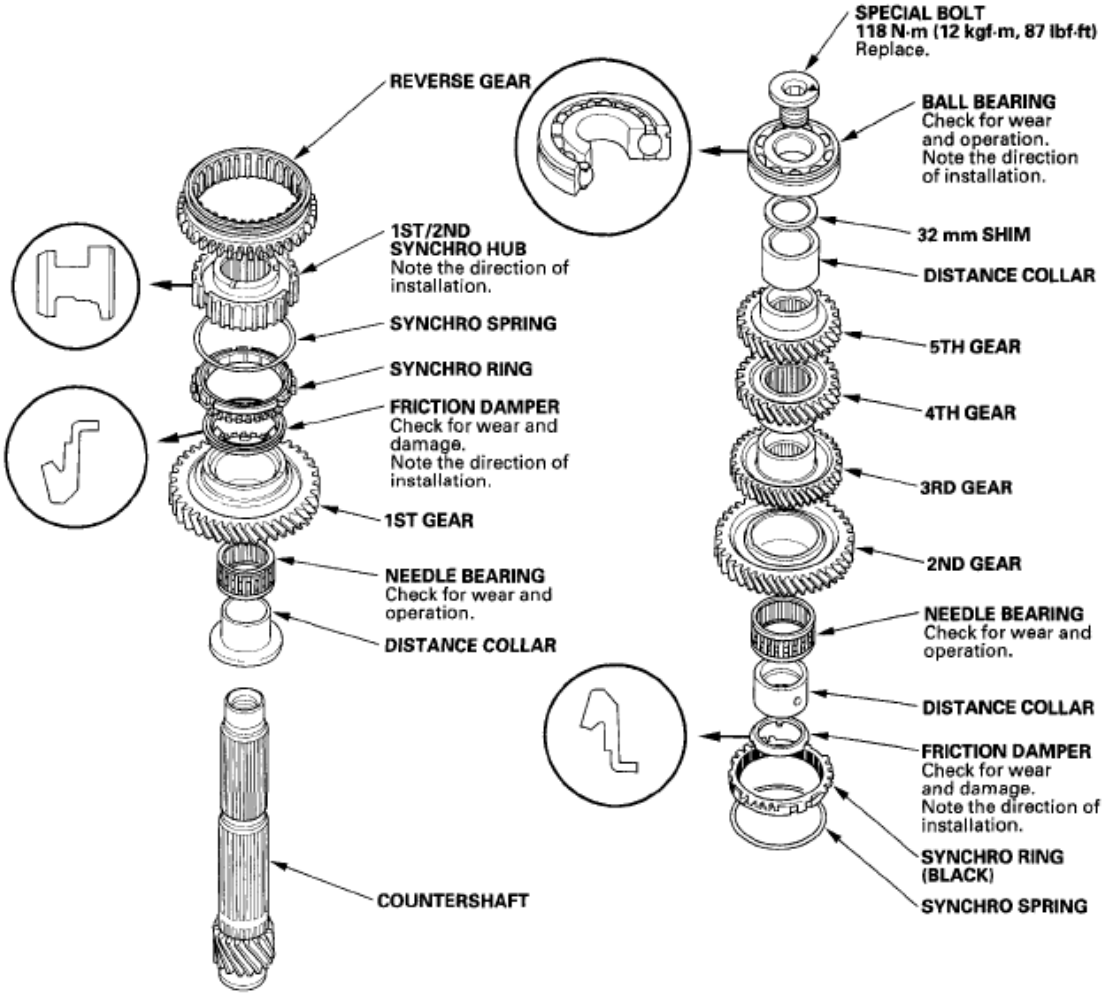


Fig. 113: Exploded View Of Countershaft Assembly (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Driver, 40 mm I.D. 07746-0030100
- Attachment, 30 mm I.D. 07746-0030300

NOTE: Refer to the Exploded View, as needed, during this procedure.

1. Clean all parts in solvent, dry them, and apply MTF to all contact surfaces.
2. Install the distance collar and the needle bearing onto the countershaft.
3. Install the 1st gear synchro ring (A), synchro spring (B) and the friction damper (C) on the 1st/2nd synchro hub (D).

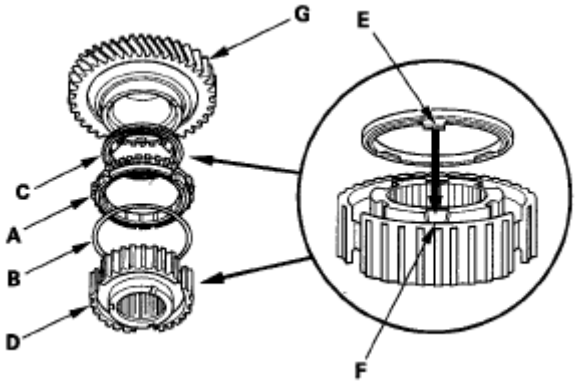


Fig. 114: Installing 1st Gear Synchro Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Align the fingers (E) on the friction damper with the grooves (F) on the 1st/2nd synchro hub, then install the 1st gear (G) onto the 1st/2nd synchro hub.
5. Supporting by hand, turn the 1st/2nd synchro hub side upward, then install the 1st/2nd synchro hub with 1st gear on to the counter shaft.
6. Support the countershaft (A) on steel blocks, then install the 1st/2nd synchro hub (B) with 1st gear (C) using the 40 mm I.D. driver (D), 30 mm I.D. attachment (E), and a press (F).

NOTE: Do not exceed the maximum pressure.

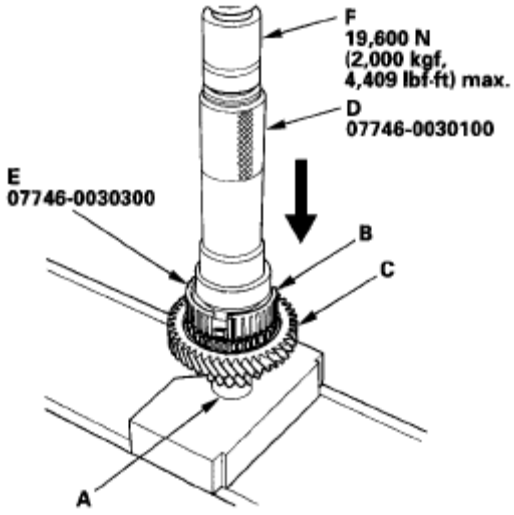


Fig. 115: Supporting Countershaft On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install reverse gear, the synchro spring, and the synchro ring on the shaft.
8. Install the distance collar (A) and friction damper (B), by aligning the friction damper fingers (C) with the 1st/2nd synchro hub grooves (D).

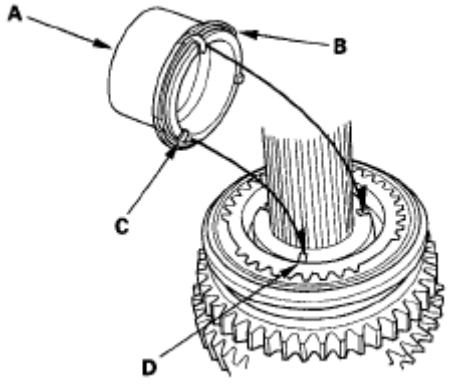


Fig. 116: Identifying Distance Collar And Friction Damper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the needle bearing and 2nd gear.
10. Support the countershaft (A) on steel blocks, then install 3rd gear (B) using the 40 mm I.D. driver (C) and a press (D).

NOTE: Do not exceed the maximum pressure.

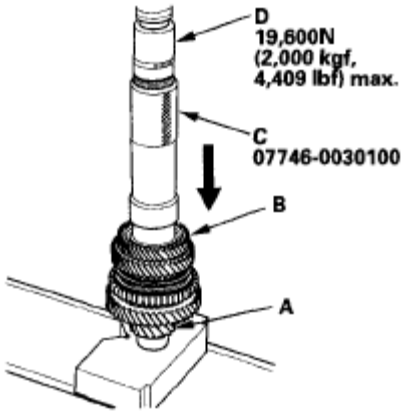


Fig. 117: Supporting Countershaft On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install 4th gear (A) using the 40 mm I.D. driver (B) and a press (C).

NOTE: Do not exceed the maximum pressure.

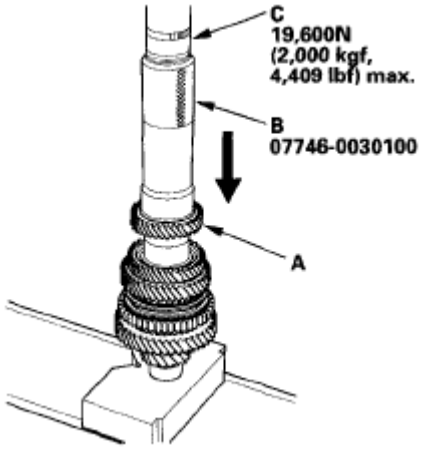


Fig. 118: Installing 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install 5th gear (A) using the 40 mm I.D. driver (B) and a press (C).

NOTE: Do not exceed the maximum pressure.

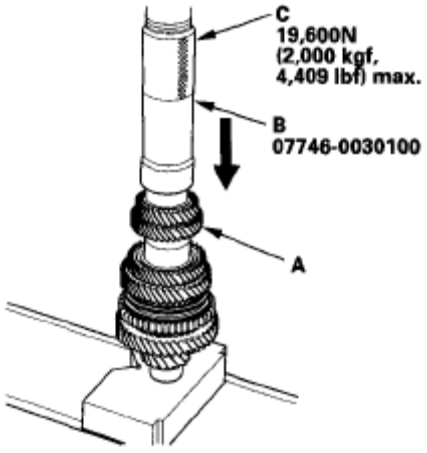


Fig. 119: Installing 5th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the distance collar.
14. Install the 32 mm shim and the old ball bearing (A) using the 40 mm I.D. driver (B), 30 mm I.D. attachment (C), and a press.

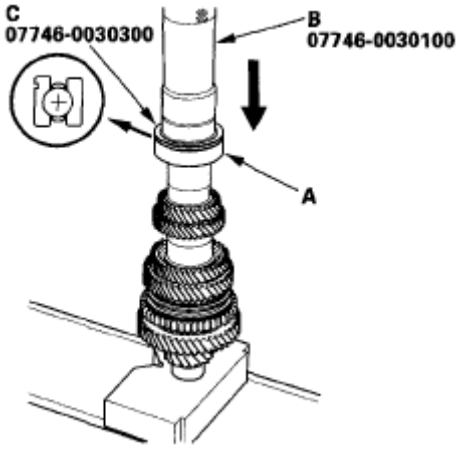


Fig. 120: Installing Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Measure clearance between the old bearing (A) and the 32 mm shim (B) with a feeler gauge (C).

Standard: 0.04-0.10 mm (0.0016-0.0039 in.)

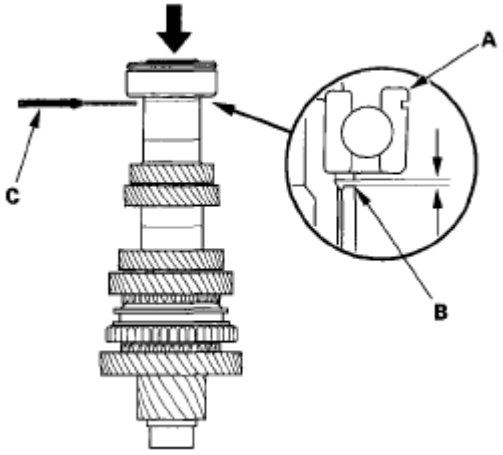


Fig. 121: Measuring Clearance Between Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. If the clearance is more than the standard, select a new shim from the following table. If the clearance measured in step 15 is within the standard, replace only the new ball bearing.

SHIM SPECIFICATION 32 MM

	Part Number	Thickness
A	23971-RPF-000	1.56 mm (0.061 in.)
B	23972-RPF-000	1.60 mm (0.063 in.)
C	23973-RPF-000	1.64 mm (0.065 in.)
D	23974-RPF-000	1.68 mm (0.066 in.)
E	23975-RPF-000	1.72 mm (0.068 in.)
F	23976-RPF-000	1.76 mm (0.069 in.)
G	23977-RPF-000	1.80 mm (0.071 in.)
H	23978-RPF-000	1.84 mm (0.072 in.)
J	23979-RPF-000	1.88 mm (0.074 in.)
K	23980-RPF-000	1.92 mm (0.076 in.)
L	23981 -RPF-000	1.96 mm (0.077 in.)
M	23982-RPF-000	2.00 mm (0.079 in.)
N	23983-RPF-000	2.04 mm (0.080 in.)
P	23984-RPF-000	2.08 mm (0.082 in.)
Q	23985-RPF-000	2.12 mm (0.083 in.)

R	23986-RPF-000	2.16 mm (0.085 in.)
S	23987-RPF-000	2.20 mm (0.087 in.)
T	23988-RPF-000	2.24 mm (0.088 in.)
U	23989-RPF-000	2.28 mm (0.090 in.)
V	23990-RPF-000	2.32 mm (0.091 in.)

17. Support ball bearing (A) on steel blocks (B), then use a press (C) and an attachment (D) to press the countershaft out of the ball bearing.

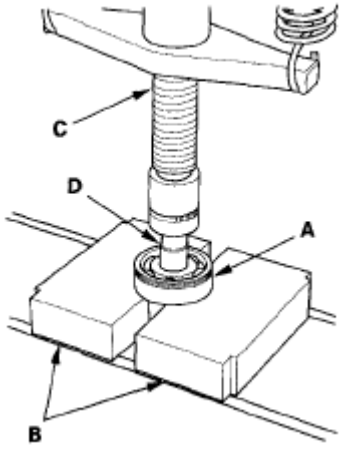


Fig. 122: Supporting Ball Bearing On Steel Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. If necessary, install the 32 mm shim selected in step 16.
19. Install the new ball bearing (A) using the 40 mm I.D. driver (B), 30 mm I.D. attachment (C), and a press, then recheck the clearance.

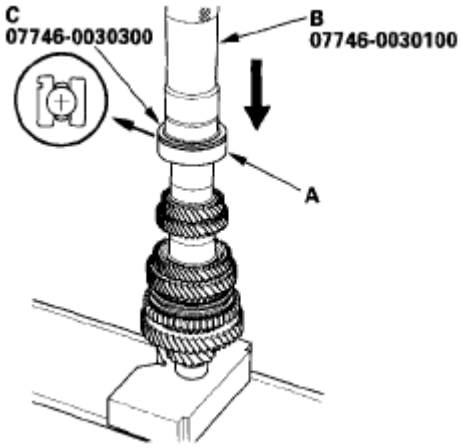


Fig. 123: Installing Ball Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Securely clamp the countershaft assembly in a bench vise with wood blocks (A).

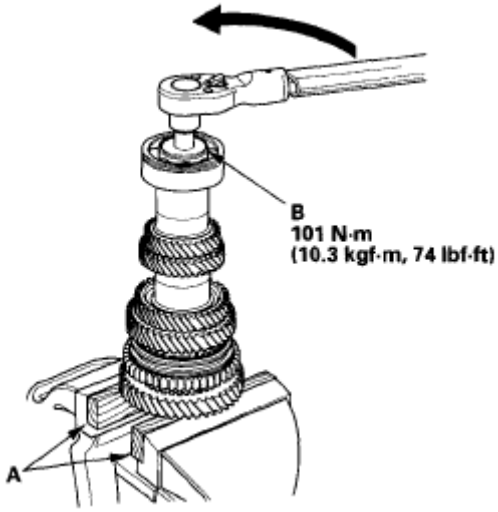


Fig. 124: Securing Clamp Countershaft Assembly In Bench Vise (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Tighten the new special bolt (B) (left-hand threads).

SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY

1. Inspect gear teeth on all synchro hubs and synchro sleeves for rounded off

corners, which indicate wear.

2. Install each synchro hub (A) in its mating synchro sleeve (B), and check for free movement. Make sure to match the three sets of longer teeth (C) (120 degrees apart) on the synchro sleeve with the three sets of deeper grooves (D) in the synchro hub.

NOTE:

- **Do not install the synchro sleeve with its longer teeth in the synchro hub slots (E) because it will damage the spring ring.**
- **If replacement is required, always replace the synchro sleeve and synchro hub as a set.**

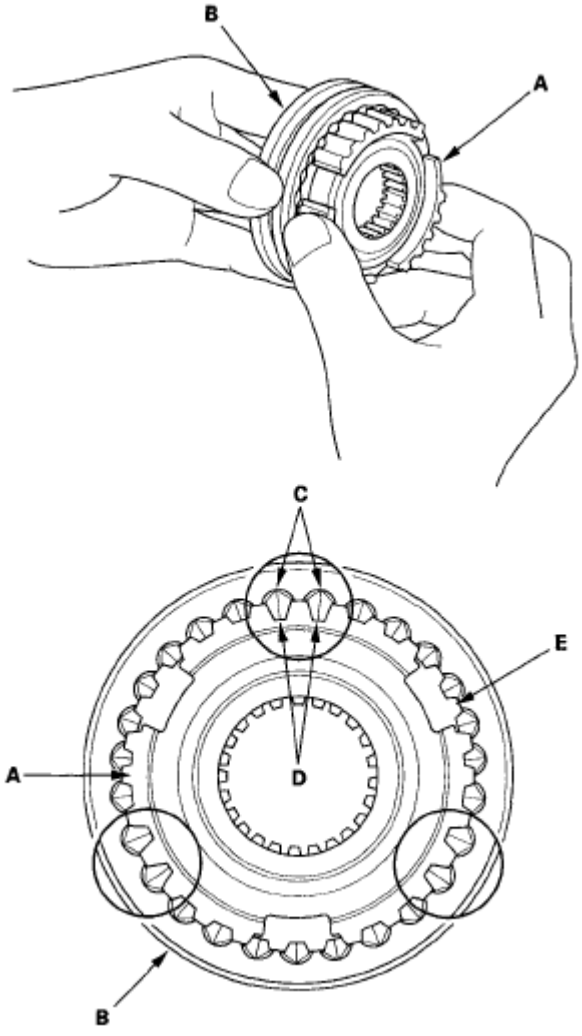
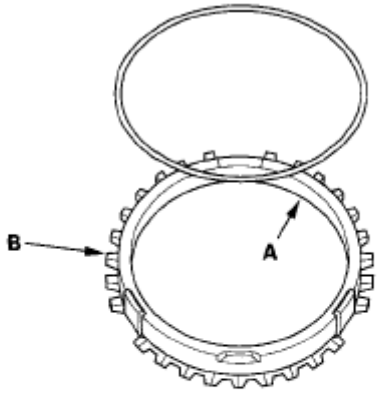


Fig. 125: Inspecting Gear Teeth On Synchro Hubs And Synchro Sleeves

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYNCHRO RING AND GEAR INSPECTION

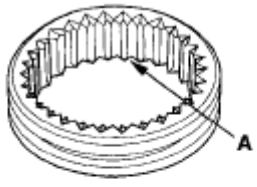
1. Inspect the inside of each synchro ring (A) for wear. Inspect the teeth (B) on each synchro ring for wear (rounded off).



Example of synchro ring teeth

Fig. 126: Locating Synchro Ring Teeth
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the teeth (A) on each synchro sleeve and matching teeth on each gear for wear (rounded off).



Example of synchro sleeve teeth and gear teeth

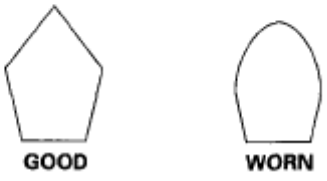


Fig. 127: Locating Synchro Sleeve And Matching Teeth
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the thrust surface (A) on each gear hub for wear.

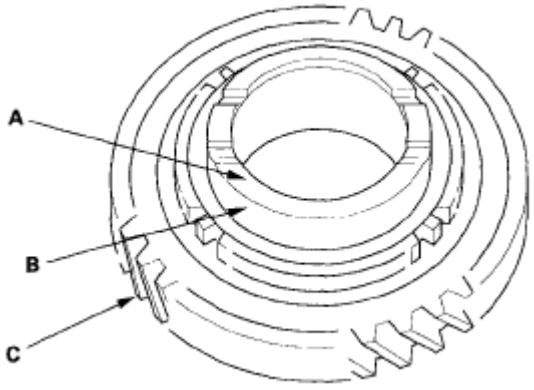


Fig. 128: Locating Thrust Surface On Gear Hub For Wear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the cone surface (B) on each gear hub for wear and roughness.
5. Inspect the teeth on all gears (C) for uneven wear, scoring, and cracks.
6. Coat the cone surface of each gear with MTF, and place its synchro ring on it. Rotate the synchro ring, making sure that it does not slip.
7. Measure clearance between each gear (A) and its synchro ring (B) all around the gear. Hold the synchro ring against the gear evenly while measuring clearance. If the clearance is less than the service limit, replace the synchro ring and gear.

Synchro Ring-to-Gear Clearance

Standard: 0.655-1.334 mm (0.026-0.053 in.)

Service Limit: 0.4 mm (0.016 in.)

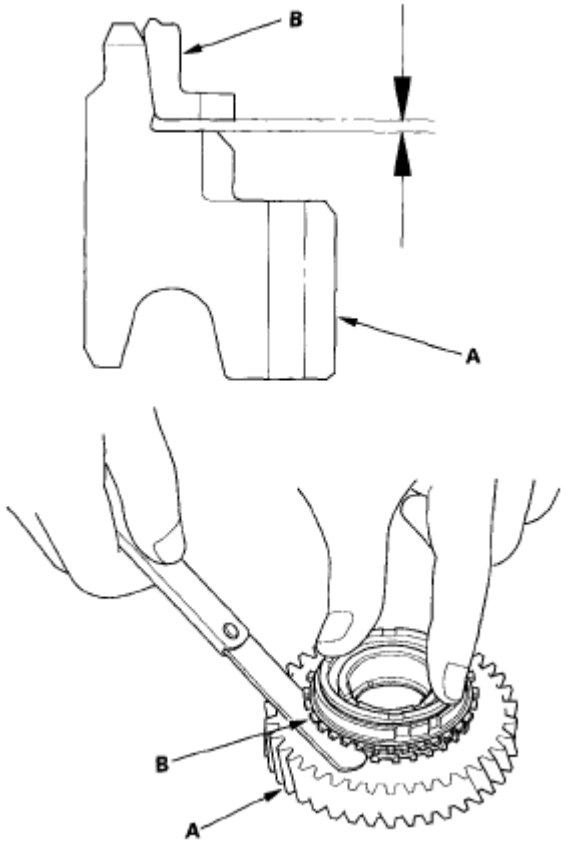


Fig. 129: Measuring Clearance Between Gear And Synchro Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT BEARING AND OIL SEAL REPLACEMENT

Special Tools Required

- Oil seal driver 07JAD-PL90100
- Adjustable bearing puller, 20-40 mm 07736-A01000B
- Attachment, 42x47 mm 07746-0010300
- Driver 07749-0010000
- Slide hammer, 3/8-16 UNF commercially available

1. Remove the ball bearing (A) from the clutch housing (B) using the 20-40 mm adjustable bearing puller (C) and a commercially available 3/8"-16 UNF slide hammer (D).

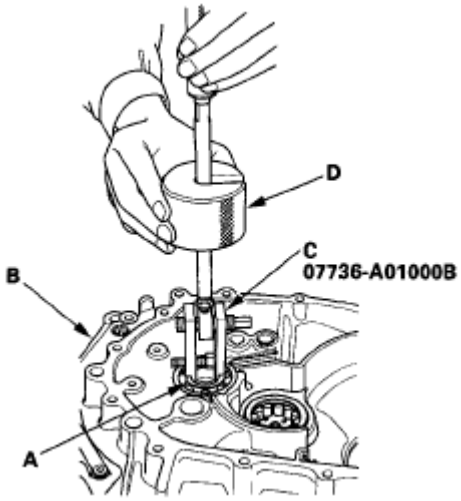


Fig. 130: Removing Ball Bearing From Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the oil seal (A) from the clutch side. Be careful when removing the oil seal so the clutch housing is not damaged.

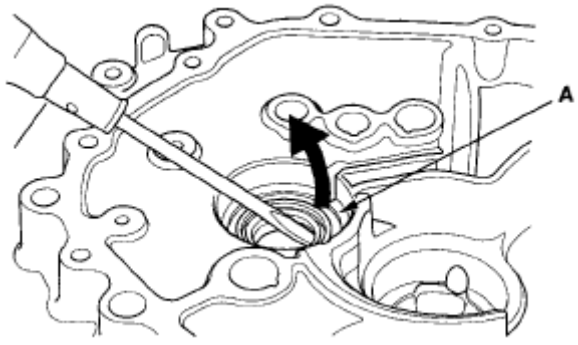


Fig. 131: Locating Oil Seal From Clutch Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Drive in the new oil seal from the transmission side using the drive (A) and 42 x 47 mm attachment (B).

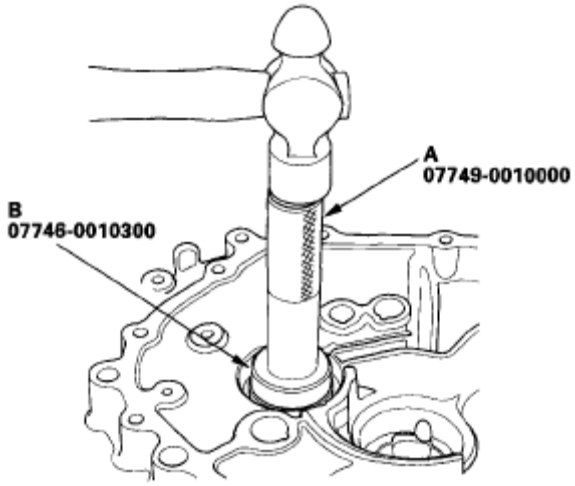


Fig. 132: Driving Oil Seal From Transmission Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Drive in the new ball bearing from the transmission side using the oil seal driver (A).

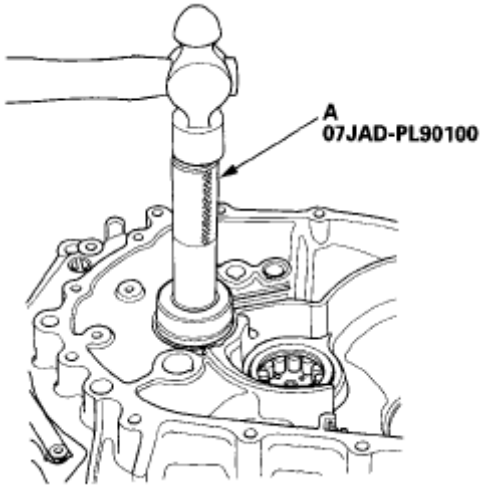


Fig. 133: Driving Ball Bearing From Transmission Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT BEARING REPLACEMENT

Special Tools Required

- Oil seal driver 07JAD-PL90100
- Adjustable bearing puller, 20-40 mm 07736-A01000B

- Slide hammer, 3/8"-16 UNF commercially available

1. Remove the needle bearing (A) using the 20-40 mm adjustable bearing puller (B) and a commercially available 3/8"-16 UNF slide hammer (D), then remove oil guide plate C.

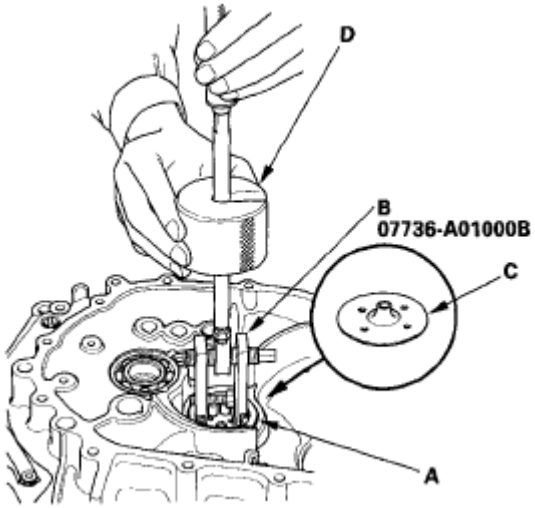


Fig. 134: Removing Needle Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Position oil guide plate C and new needle bearing (A) in the bore of the clutch housing (B).

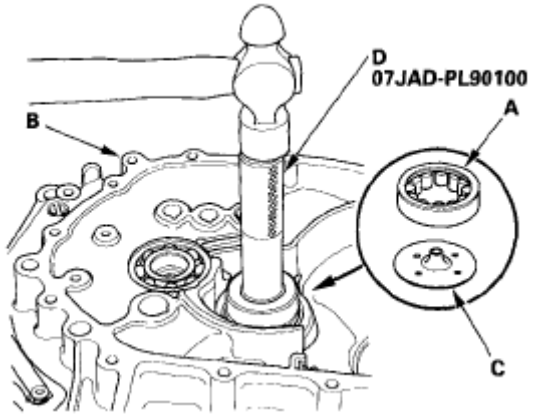


Fig. 135: Installing Needle Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the needle bearing using the oil seal driver (D).

MAINSHAFT THRUST CLEARANCE ADJUSTMENT

Special Tools Required

- Mainshaft holder 07GAJ-PG20110
- Mainshaft base 07GAJ-PG20130

1. Remove the 52 x 62 mm shim (A) and oil guide plate M from the transmission housing (B).

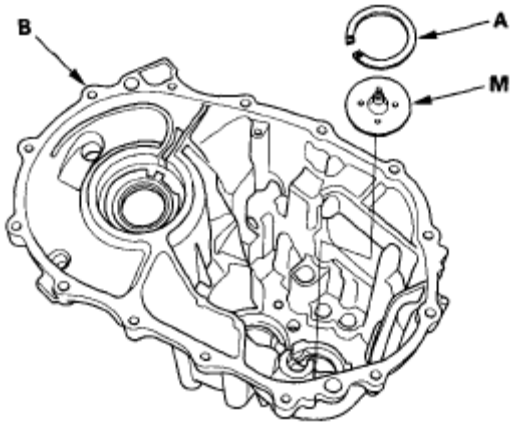


Fig. 136: Identifying Shim And Oil Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Thoroughly clean the 36 mm spring washer (A) and 26 mm washer (B) before installing them on the clutch housing side ball bearing (C). Note the installation direction of the spring washer.

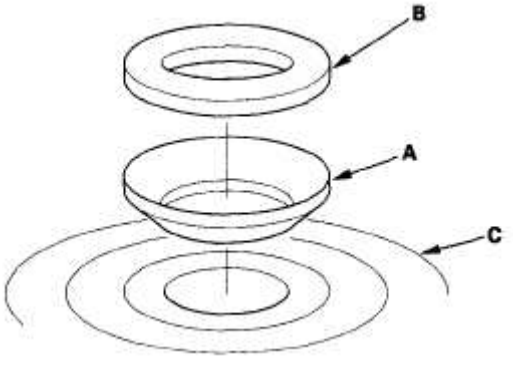


Fig. 137: Identifying Spring Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the 3rd/4th synchro hub, the 4th/5th gear distance collar, the 5th synchro hub, the MBS distance collar, and angular ball bearing on the mainshaft.

NOTE: Refer to the MAINSHAFT REASSEMBLY EXPLODED VIEW .

4. Install the mainshaft in the clutch housing.
5. Place the transmission housing over the mainshaft and onto the clutch housing.
6. Tighten the clutch and transmission housings with several 8 mm bolts.

NOTE: It is not necessary to use sealing agent between the housings for this procedure.

7. Lightly tap on the mainshaft with a plastic hammer.
8. Attach the mainshaft holder (A) and mainshaft base (B) to the mainshaft as follows:
   - Backout the mainshaft holder bolt (C), and loosen the two hex bolts (D).
   - Fit the holder over the mainshaft so its lip is toward the transmission.
   - Align the mainshaft holder lip around the groove at the inside of the mainshaft splines, then tighten the hex bolts.

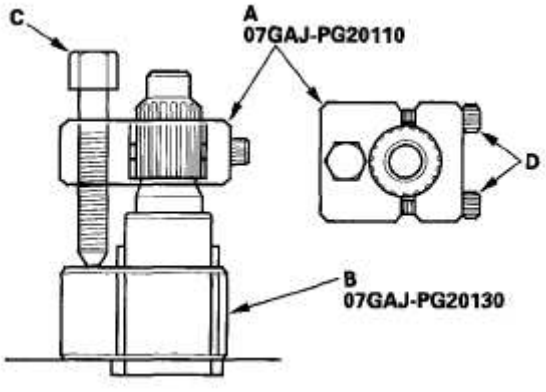


Fig. 138: Identifying Mainshaft Holder And Mainshaft Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Fully seat the mainshaft by tapping its end with a plastic hammer.
10. Thread the mainshaft holder bolt in until it just contacts the wide surface of the mainshaft base.
11. Zero a dial gauge (A) on the end of the mainshaft.

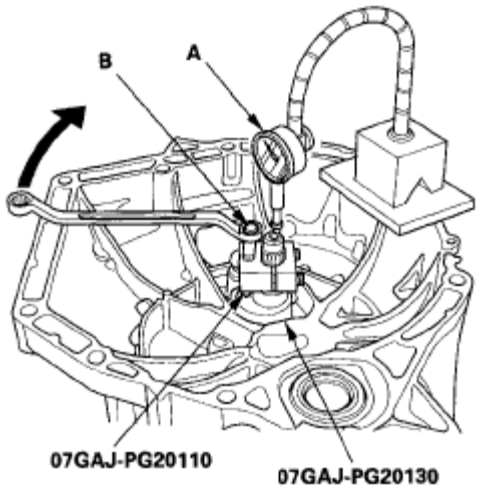


Fig. 139: Identifying Dial Gauge On End Of Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Turn the mainshaft holder bolt (B) clockwise; stop turning when the dial gauge has reached its maximum movement. The reading on the dial gauge is the amount of mainshaft thrust clearance.

NOTE: Do not turn the mainshaft holder bolt more than 60 degrees after the needle of the dial gauge stops moving. Applying more pressure with the mainshaft holder bolt could damage the transmission.

13. If the reading is with in the standard, the clearance is correct. If the reading is not within the standard, select the appropriate shim needed from the table, and recheck the thrust clearance.

Standard: 0.11-0.18 mm (0.004-0.007 in.)

(Example)

Measure reading: 1.93 mm (0.0759 in.)

Subtract the total clearance measurement from the middle of the clearance standard 0.14 mm (0.0055 in.)

1.93 - 0.14 = 1.79 mm (0.0705 in.)

Select the shim closest to the amount calculated, for example the 1.78 mm (0.0701 in.) shim.

14. With oil guide plate M and the appropriate size shim installed in the transmission housing, check the thrust clearance again to verify the clearance is within the standard.

SHIM SPECIFICATION 52 X 62 MM

	Part Number	Thickness
A	23931-PZ9-000	0.85 mm (0.0335 in.)
B	23932-PZ9-000	0.88 mm (0.0346 in.)
C	23933-PZ9-000	0.91 mm (0.0358 in.)
D	23934-PZ9-000	0.94 mm (0.0370 in.)
E	23935-PZ9-000	0.97 mm (0.0382 in.)
F	23936-PZ9-000	1.00 mm (0.0394 in.)
G	23937-PZ9-000	1.03 mm (0.0406 in.)
H	23938-PZ9-000	1.06 mm (0.0417 in.)
I	23939-PZ9-000	1.09 mm (0.0429 in.)
J	23940-PZ9-000	1.12 mm (0.0441 in.)
K	23941-PZ9-000	1.15 mm (0.0453 in.)
L	23942-PZ9-000	1.18 mm (0.0465 in.)
M	23943-PZ9-000	1.21 mm (0.0476 in.)
N	23944-PZ9-000	1.24 mm (0.0488 in.)
O	23945-PZ9-000	1.27 mm (0.0500 in.)
P	23946-PZ9-000	1.30 mm (0.0512 in.)
Q	23947-PZ9-000	1.33 mm (0.0524 in.)
R	23948-PZ9-000	1.36 mm (0.0535 in.)

S	23949-PZ9-000	1.39 mm (0.0547 in.)
T	23950-PZ9-000	1.42 mm (0.0559 in.)
U	23951-PZ9-000	1.45 mm (0.0571 in.)
V	23952-PZ9-000	1.48 mm (0.0583 in.)
W	23953-PZ9-000	1.51 mm (0.0594 in.)
X	23954-PZ9-000	1.54 mm (0.0606 in.)
Y	23955-PZ9-000	1.57 mm (0.0618 in.)
Z	23956-PZ9-000	1.60 mm (0.0630 in.)
AA	23957-PZ9-000	1.63 mm (0.0642 in.)
AB	23958-PZ9-000	1.66 mm (0.0654 in.)
AC	23959-PZ9-000	1.69 mm (0.0665 in.)
AD	23960-PZ9-000	1.72 mm (0.0677 in.)
AE	23987-PZ9-000	1.75 mm (0.0689 in.)
AF	23988-PZ9-000	1.78 mm (0.0701 in.)
AG	23989-PZ9-000	1.81 mm (0.0713 in.)
AH	23990-PZ9-000	1.84 mm (0.0724 in.)
AI	23991-PZ9-000	1.87 mm (0.0736 in.)
AJ	23992-PZ9-000	1.90 mm (0.0748 in.)
AK	23993-PZ9-000	1.93 mm (0.0760 in.)
AL	23994-PZ9-000	1.96 mm (0.0772 in.)
AM	23995-PZ9-000	1.99 mm (0.0783 in.)
AN	23996-PZ9-000	2.02 mm (0.0795 in.)
AO	23997-PZ9-000	2.05 mm (0.0807 in.)
AP	23998-PZ9-000	2.08 mm (0.0819 in.)
AQ	23999-PZ9-000	2.11 mm (0.0831 in.)

TRANSMISSION REASSEMBLY

NOTE:

- **Prior to reassembling, clean all the parts in solvent, dry them, and apply MTF to any contact surfaces.**
- **Place the clutch housing on two pieces of wood thick enough to keep the mainshaft from hitting the**

workbench.

1. Install the magnet (A) and differential assembly (B).

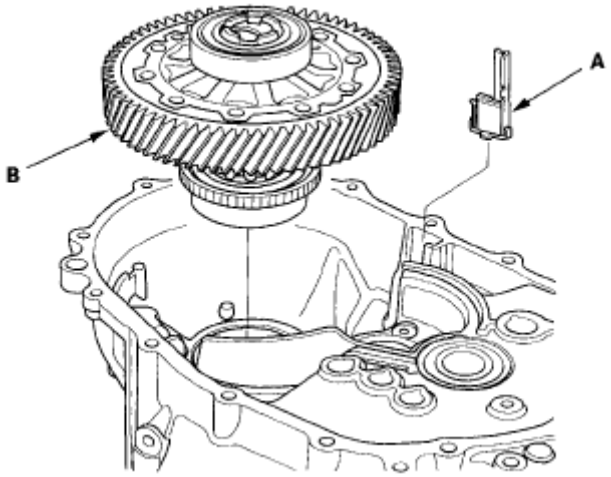


Fig. 140: Identifying Magnet And Differential Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 36 mm spring washer (A) and 26 mm washer (B) over the ball bearing (C). Note the installation direction of the spring washer.

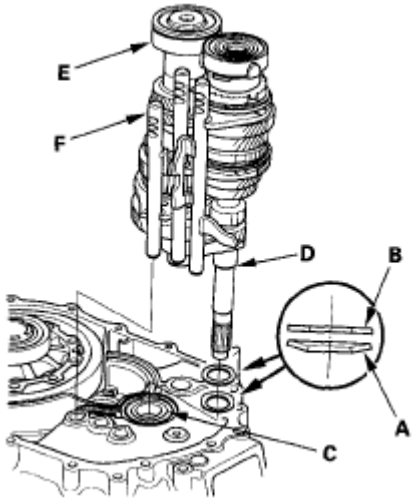


Fig. 141: Identifying Spring Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Apply tape on the mainshaft (D) spline to protect the seal. Install the mainshaft

assembly and countershaft assembly (E) into the shift forks (F), and install them as an assembly.

4. Install the reverse idler gear (A) and the reverse gear shaft (B).

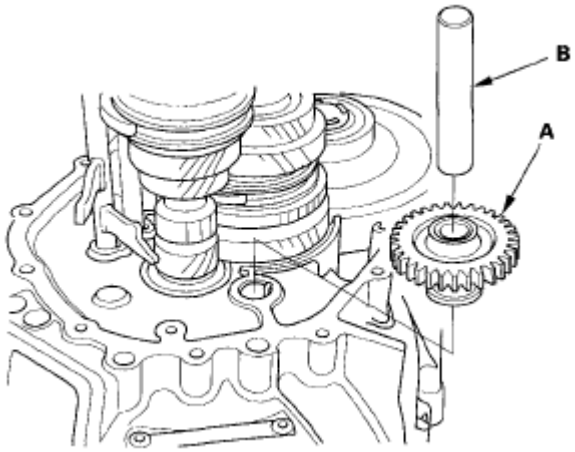


Fig. 142: Identifying Reverse Idler Gear And Reverse Gear Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the reverse shift fork.

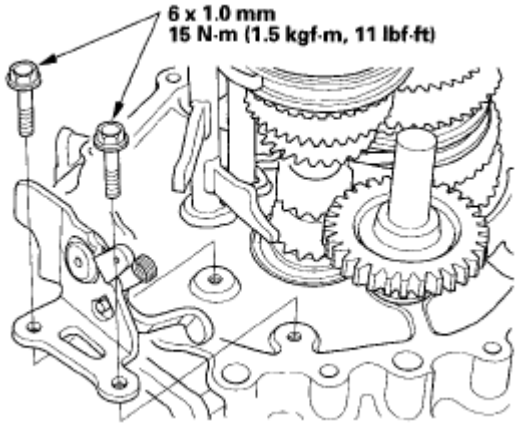


Fig. 143: Identifying Reverse Shift Fork (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Select the proper size 52 x 62 mm shim (A) according to the measurements made during the Mainshaft Thrust Clearance Adjustment (see **MAINSHAFT THRUST CLEARANCE ADJUSTMENT**). Install the oil gutter plate (B), oil guide plate M, and the 52 x 62 mm shim into the transmission housing (C).

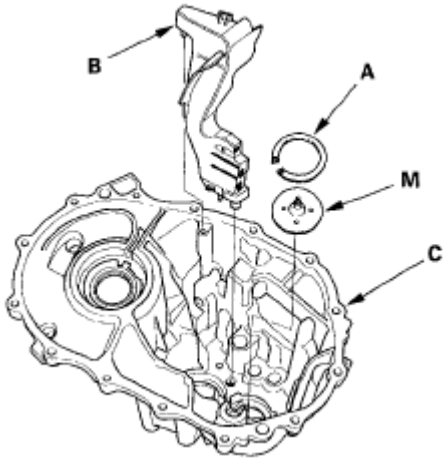


Fig. 144: Identifying Oil Gutter Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Clean any dirt or oil from the transmission housing sealing surface.
8. Apply liquid gasket (P/IM 08718-0002) evenly to the mating surface of the transmission housing and clutch housing. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket residue, then reapply new liquid gasket.**

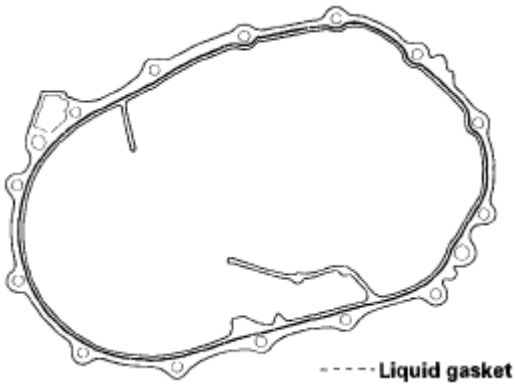


Fig. 145: Identifying Liquid Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the two 14 x 20 mm dowel pins (A).

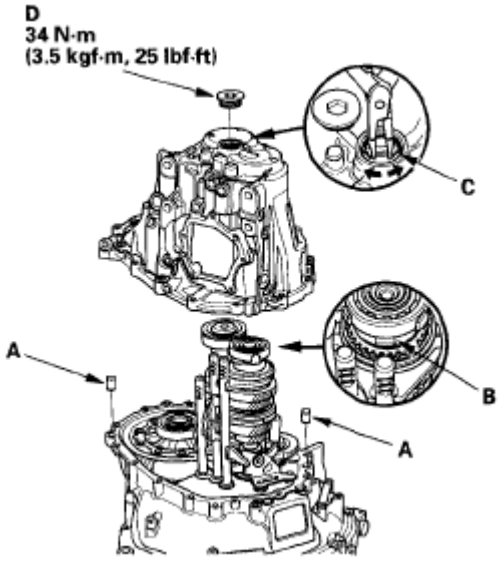


Fig. 146: Identifying Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

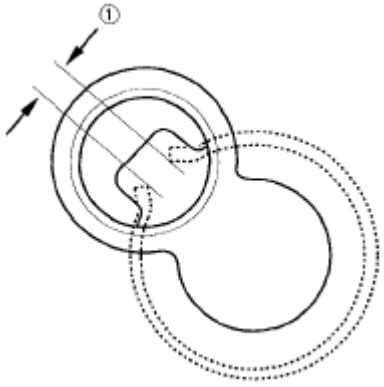


Fig. 147: Identifying Snap Ring Groove Dimension
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Set the tapered cone ring (B) as shown. Place the transmission housing over the clutch housing, being careful to line up the shafts.
11. Lower the transmission housing the rest of the way as you expand the 69 mm snap ring (C). Release the snap ring so it seats in the groove of the countershaft bearing.
12. Make sure the 69 mm snap ring is securely seated in the groove of the

countershaft bearing.

Dimension (1) as installed: 3.3-6.5 mm (0.13-0.25 in.)

13. Apply liquid gasket (P/N 08718-0002) evenly to the threads of the 32 mm sealing cap (D), and install it on the transmission housing. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket residue, then reapply new liquid gasket.**

14. Install the 8 mm flange bolts finger-tight.

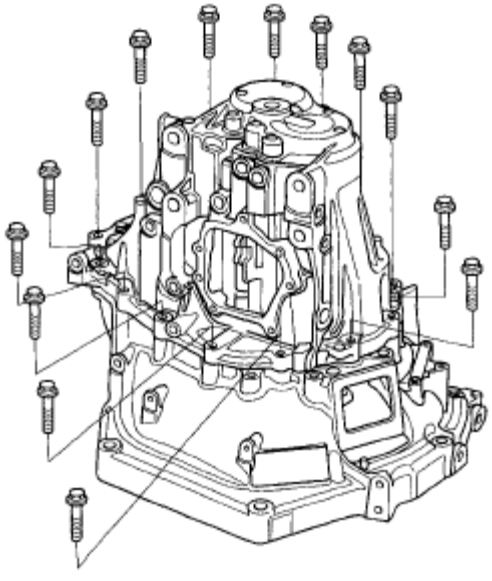


Fig. 148: Identifying Flange Bolts Finger-Tight
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Tighten the 8 mm flange bolts in a crisscross pattern in several steps.

Specified Torque:

8x1.25 mm

27 N.m (2.8 kgf.m, 20 lbf.ft)

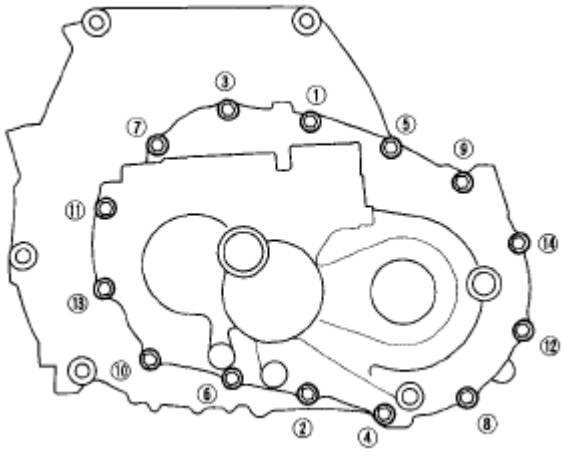


Fig. 149: Identifying Tightening Flange Bolts In Crisscross Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Clean any dirt or oil from the change lever assembly sealing surface.
17. Apply liquid gasket (P/N 08718-0002) evenly to the mating surface of the change lever assembly and the transmission housing. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket residue, then reapply new liquid gasket.**
- **Allow it to cure at least 30 minutes after assembly before filling the transmission with MRF.**

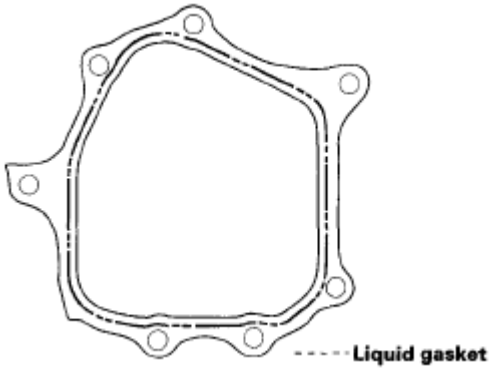


Fig. 150: Identifying Liquid Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the 8x14 mm dowel pins (A) and change lever assembly (B).

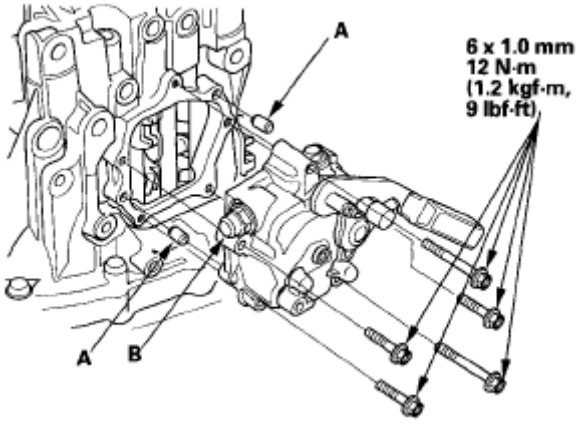


Fig. 151: Identifying Dowel Pins And Change Lever Assembly (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the drain plug (A), output shaft (countershaft) speed sensor (B), and new O-ring (C). Install the filler plug (D) finger-tight.

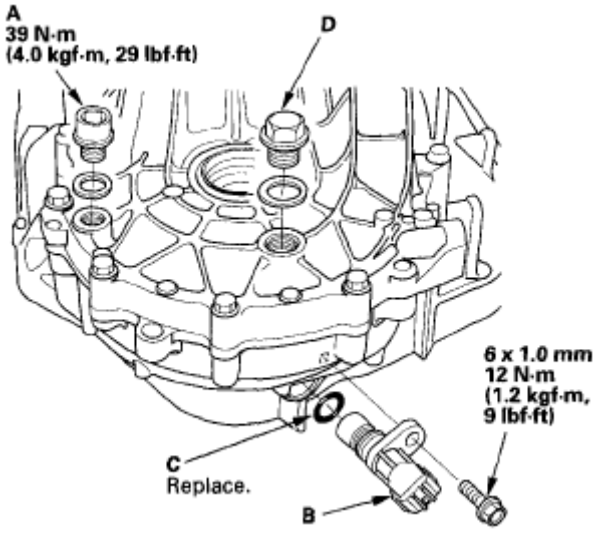


Fig. 152: Identifying Drain Plug And Output Shaft (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the steel balls, the springs, and the detent bolts (A) with new washers (B).

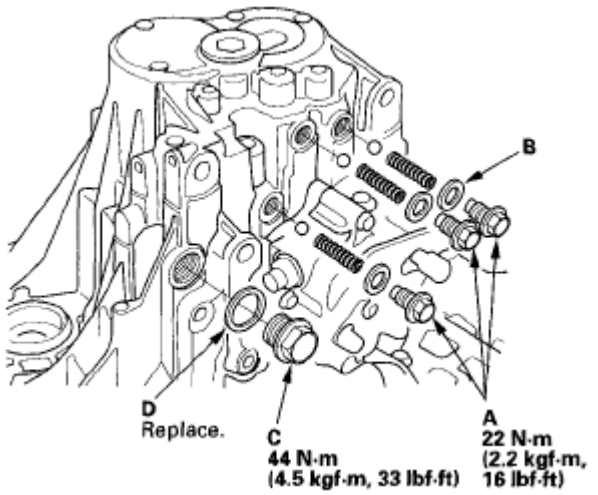


Fig. 153: Identifying Detent Bolts Springs And Steel Balls (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the 20 mm bolt (C) and new 20 mm washer (D).
22. Install the new 18 mm washer (A), the back-up light switch (B), and the

transmission hanger (C).

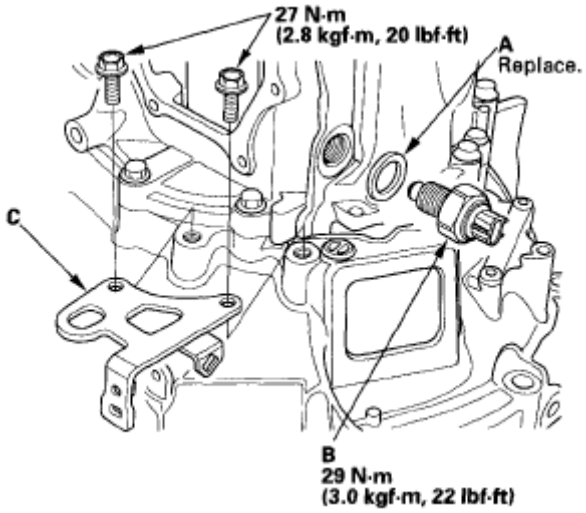


Fig. 154: Identifying Washer And Back-Up Light Switch (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the air cleaner housing bracket (A) and the harness bracket (B).

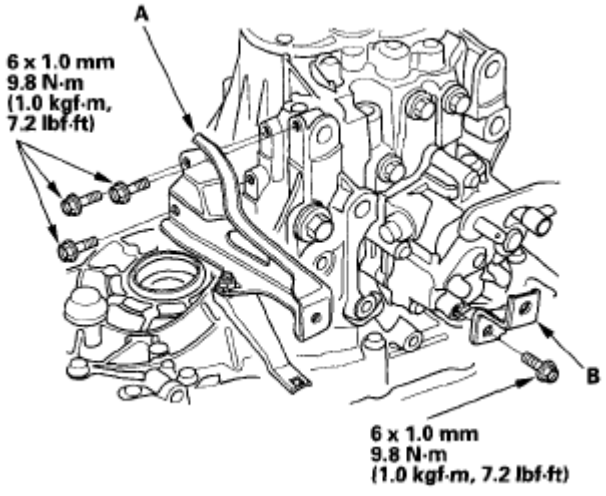


Fig. 155: Identifying Air Cleaner Housing Bracket (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GEARSHIFT MECHANISM REPLACEMENT

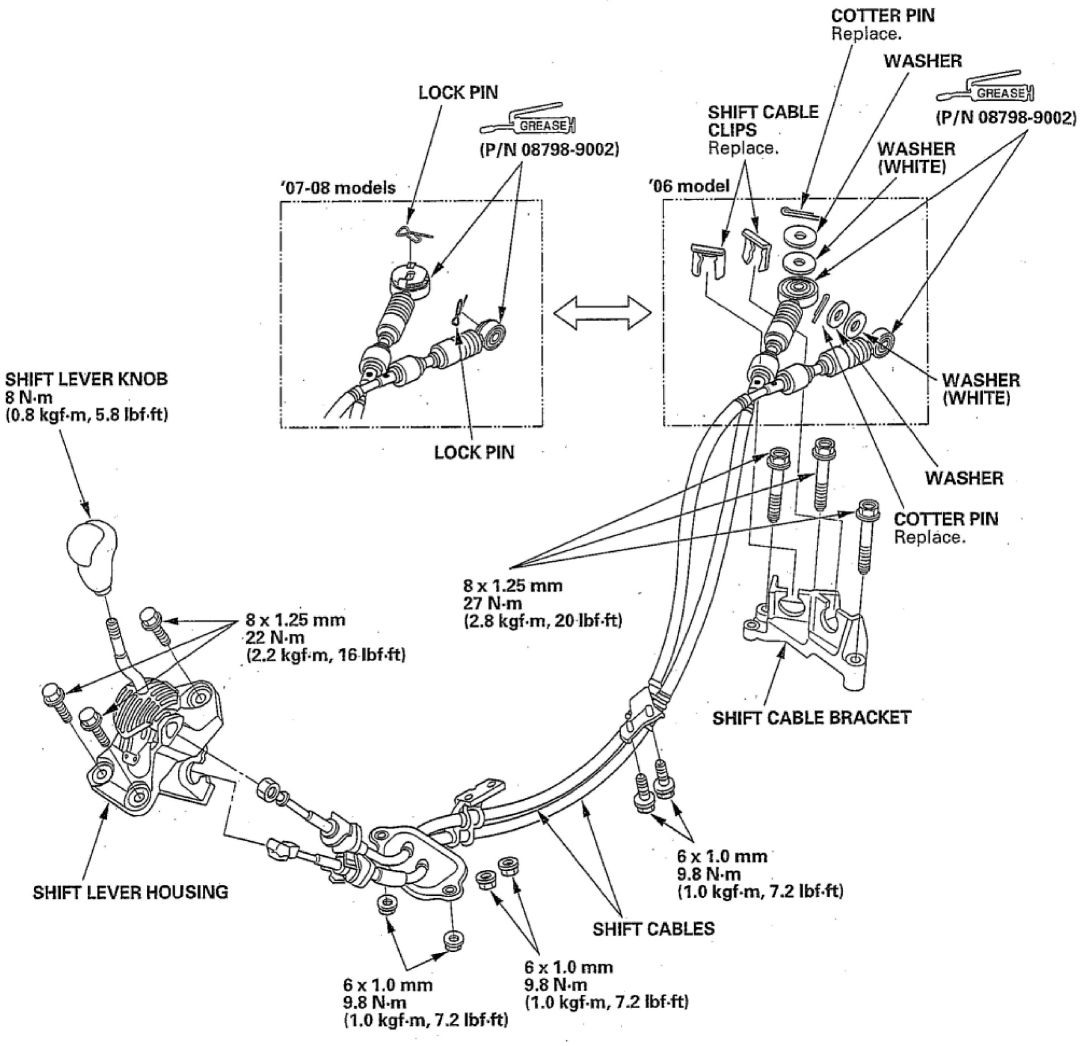


Fig. 156: Identifying Gearshift Mechanism (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

M/T DIFFERENTIAL

COMPONENT LOCATION INDEX

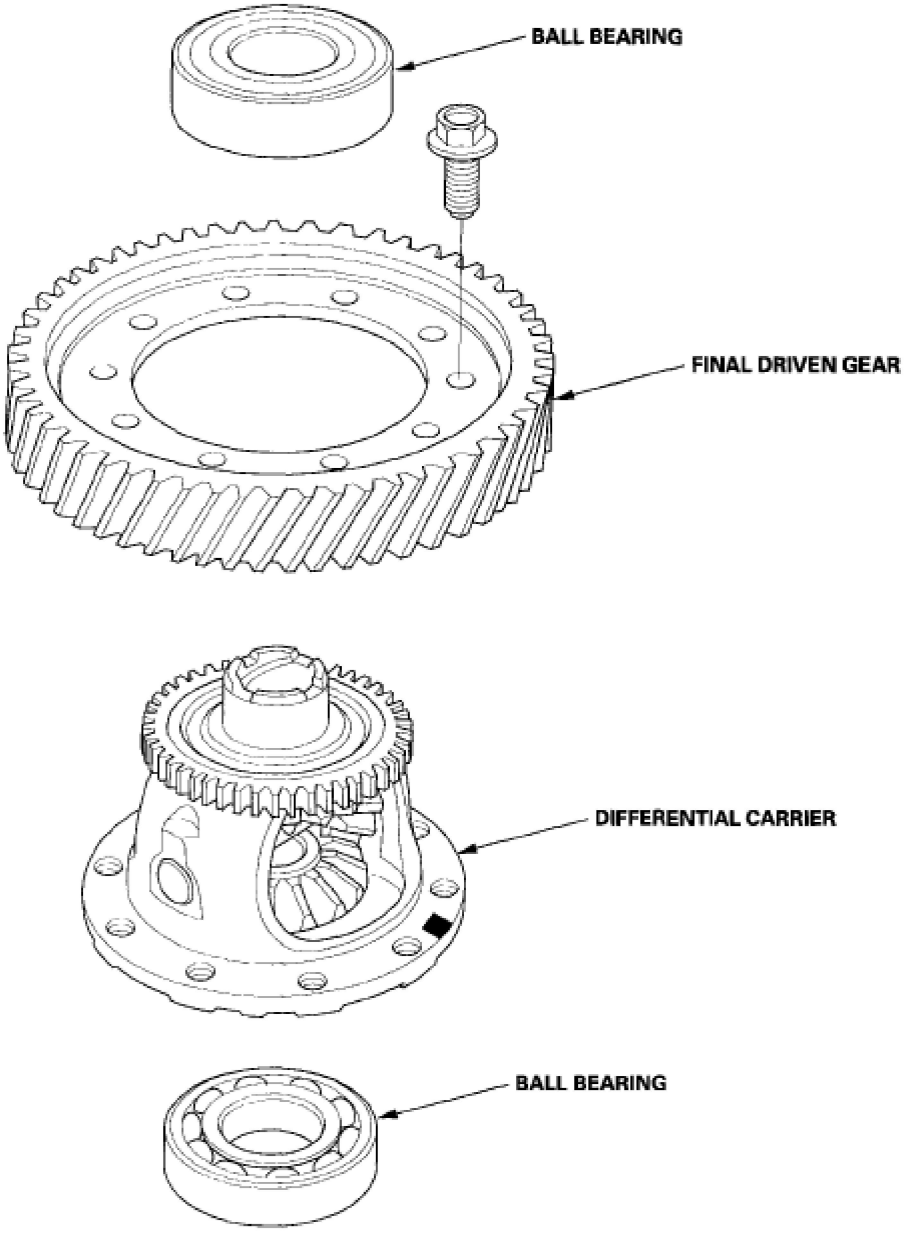


Fig. 157: Identifying M/T Differential Component Location Index
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BACKLASH INSPECTION

1. Place the differential assembly on V-blocks (A), and install the intermediate shaft (B) and the left driveshaft (C).

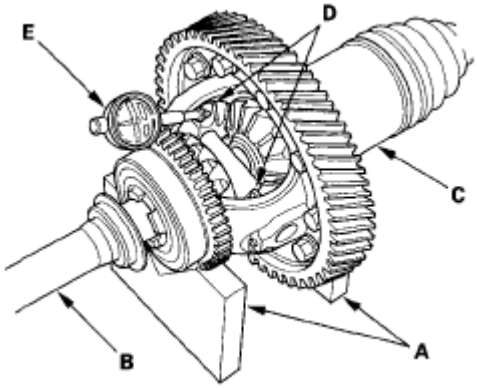


Fig. 158: Placing Differential Assembly On V-Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure backlash of both pinion gears (D) with a dial indicator (E). If the backlash is not within the standard, replace the differential carrier.

   Standard (New): 0.05-0.15 mm (0.002-0.006 in.)

DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR REPLACEMENT

1. Remove the bolts (left-hand threads) in a crisscross pattern in several steps, then remove the final driven gear (A) from the differential carrier (B).

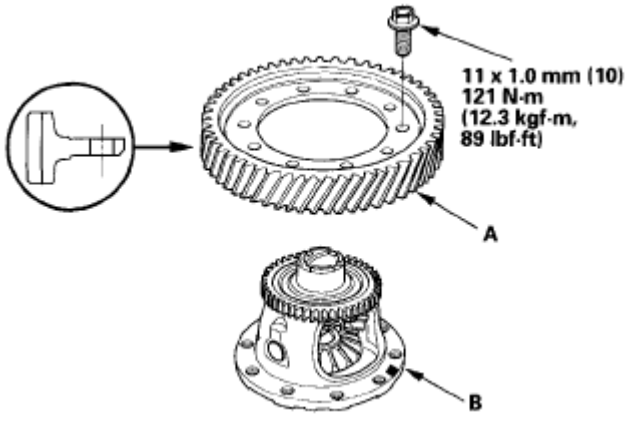


Fig. 159: Identifying Driven Gear From Differential Carrier (With Torque Specifications)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the final driven gear with the chamfer on the inside diameter facing the carrier. Tighten the bolts in a crisscross pattern in several steps.

CARRIER BEARING REPLACEMENT

Special Tool Required

Driver, 40 mm I.D. 07746-0030100

1. Check the carrier bearings for wear and rough rotation. If they rotate smoothly and their rollers show no signs of wear, the bearings are OK.
2. Remove the carrier bearings (A) with a commercially available bearing puller (B).

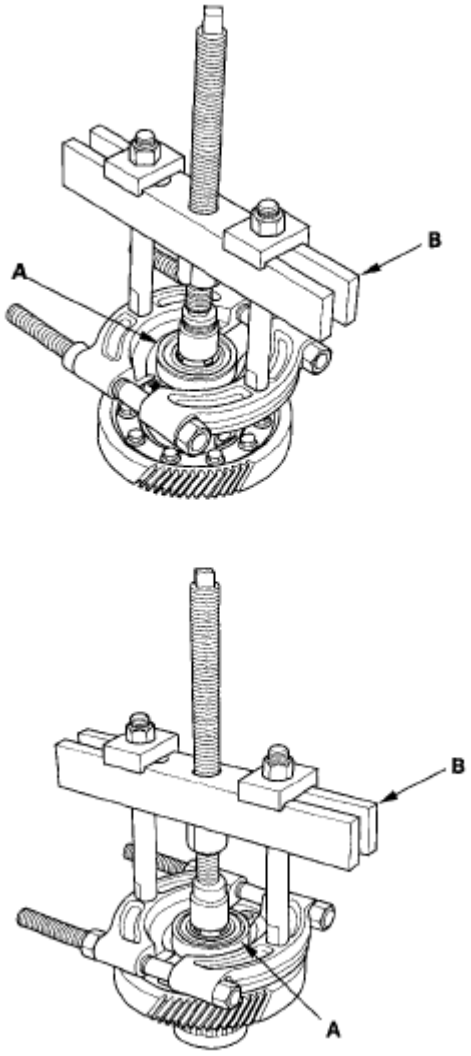


Fig. 160: Identifying Special Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new bearings (A) with the 40 mm I.D. driver (B) and a press. Press on each bearing until it bottoms. There should be no clearance between the bearings and the carrier.

NOTE: Place the seal (C) part of the bearing towards the outside of the differential, and install it.

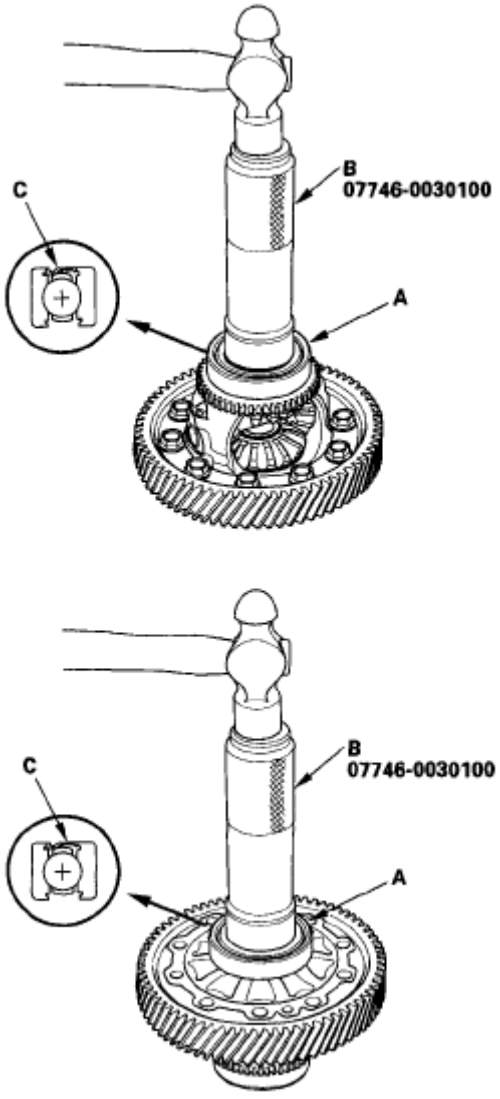


Fig. 161: Identifying Special Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL SEAL REPLACEMENT

Special Tools Required

- Oil seal driver 07JAD-PL90100
- Oil seal driver attachment 07NAD-P20A100
- Driver 07749-0010000

1. Remove the oil seal (A) from the transmission housing (B).

Fig. 162: Identifying Oil Seal From Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the oil seal (A) from the clutch housing (B).

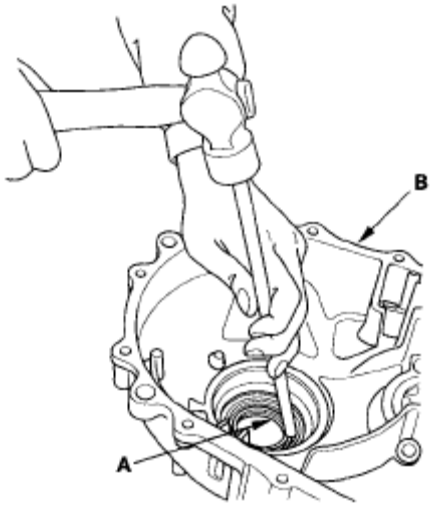


Fig. 163: Identifying Oil Seal From Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new oil seal in the transmission housing with the driver (A) and oil seal driver attachment (B).

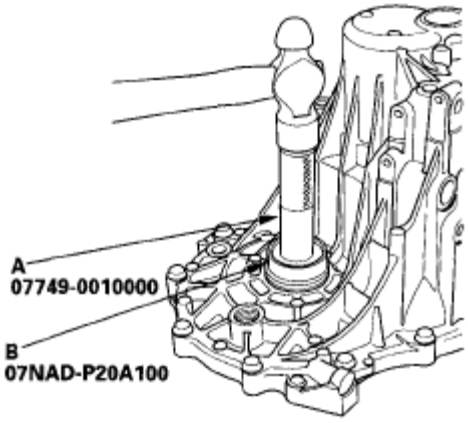


Fig. 164: Identifying Oil Seal In Transmission Housing With Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the new oil seal in the clutch housing with the oil seal driver (A).

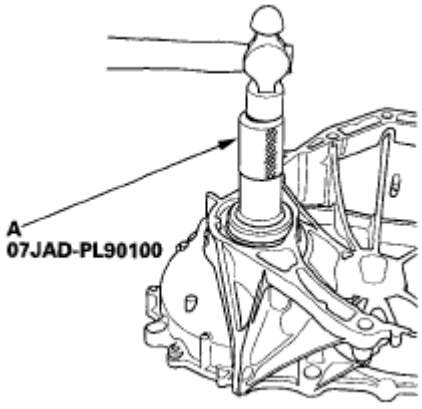


Fig. 165: Installing Oil Seal In Clutch Housing With Oil Seal Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DIFFERENTIAL THRUST CLEARANCE ADJUSTMENT

Special Tool Required

Driver, 40 mm I.D. 07746-0030100

1. If you removed the 80 mm shim from the transmission housing, reinstall the same size shim.

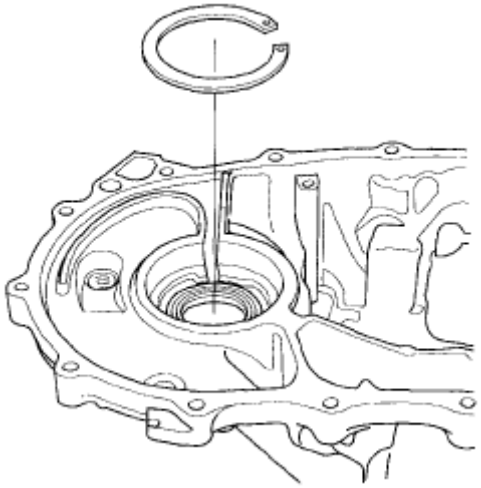


Fig. 166: Identifying Transmission Housing Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the differential assembly into the clutch housing.

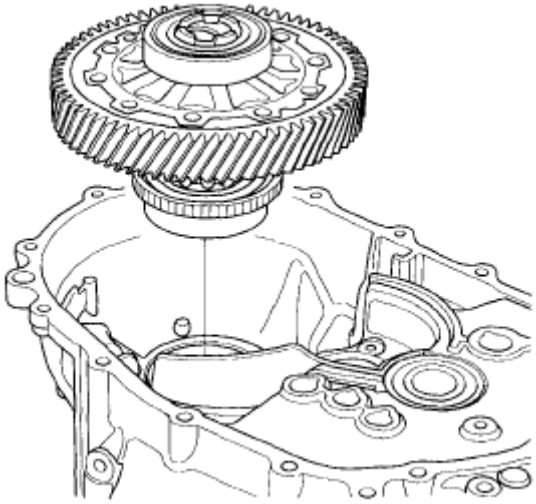


Fig. 167: Identifying Differential Assembly Into Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the transmission housing onto the clutch housing, then tighten the 8 mm

flange bolts in a crisscross pattern in several steps (see step 15).

Specified Torque

8x1.25 mm

27 N.m (2.8 kgf.m, 20 lbf.ft)

4. Use the 40 mm I.D. driver (A) to bottom the differential assembly in the clutch housing.

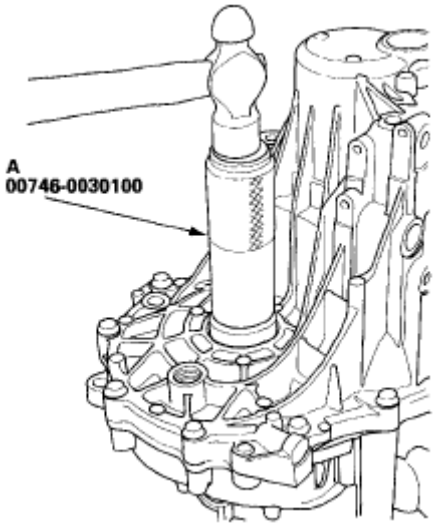


Fig. 168: Installing Differential Assembly In Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure clearance between 80 mm shim and bearing outer race in transmission housing.

Standard: 0-0.10 mm (0-0.0039 in.)

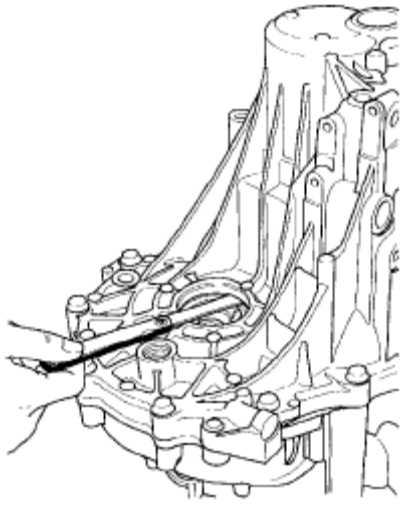


Fig. 169: Measuring Clearance Between Shim And Bearing Outer Race In Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the clearance is more than the standard, select a new 80 mm shim from the following table. If the clearance measured in step 5 is within the standard, go to step 9.

SHIM SPECIFICATION 80 MM

	Part Number	Thickness
A	41441-PL3-B00	1.0 mm (0.039 in.)
B	41442-PL3-B00	1.1 mm (0.043 in.)
C	41443-PL3-B00	1.2 mm (0.047 in.)
D	41444-PL3-B00	1.3 mm (0.051 in.)
E	41445-PL3-B00	1.4 mm (0.055 in.)
F	41446-PL3-B00	1.5 mm (0.059 in.)
G	41447-PL3-B00	1.6 mm (0.063 in.)
H	41448-PL3-B00	1.7 mm (0.067 in.)
J	41449-PL3-B00	1.8 mm (0.071 in.)
K	41450-PL3-B00	1.05 mm (0.041 in.)
L	41451-PL3-B00	1.15 mm (0.045 in.)
M	41452-PL3-B00	1.25 mm (0.049 in.)
N	41453-PL3-B00	1.35 mm (0.053 in.)

P	41454-PL3-B00	1.45 mm (0.057 in.)
Q	41455-PL3-B00	1.55 mm (0.061 in.)
R	41456-PL3-B00	1.65 mm (0.065 in.)
S	41457-PL3-B00	1.75 mm (0.069 in.)

7. Remove the bolts and transmission housing.
8. Replace the thrust shim selected in step 6, then recheck the clearance.
9. Reinstall the transmission housing.